### IBM U.S. Product Life Cycle Dates

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IBM Global Services (IGS) offers standard off the shelf Uninterruptible Power System (UPS) solutions from the top brands in the UPS industry that can be ordered with IBM hardware within the IBM hardware configurators. These UPS solutions are made available in an effort to improve availability/reliability by minimizing system outages created by power anomalies. MIS managers rate availability/reliability as their number one concern. More than 90% of client/server customers have power protection.

These solutions have been tested by IBM Server Group Power Systems Development to ensure they are compatible with the associated IBM hardware and can pass the same rigorous testing that IBM hardware is put through. This allows IBM to provide a single source of IBM hardware and Power Protection Services which in turn reduces the cost of administration and minimizes problems due to power.

The UPS solutions come in a variety of models that provide a selection of supplier, feature/function and cost. This provides the end user with the ability to pick and chose solutions to meet specific needs. Because of our broad-based relationships with national UPS suppliers, we can offer attractive pricing on bundled solutions that include the UPS, software (if necessary), cables and premium warranties managed by IBM Global Services. This ensures the right UPS solution at the right price and if there is a problem IBM ensures it is handled in the right manner.

Currently one UPS supplier is being made available. Powerware provides UPS solutions for AS/400-iSeries models. Additional information on these models can be found at:

- IBM Installation and Planning:

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These solutions are based on the average IBM hardware configuration and may not meet the specific power protection needs of the end user. IBM Global Services provides a more comprehensive listing of Power Protection Services. For more information please contact your IBM sales specialist or IBM Business Partner, or visit:


Model Abstract 9910-P10
The IBM 9910 Model P10 Powerware 9125 1000 VA (120 Vac) protects equipment up to 700 watts. This true online, double-conversion UPS features ABM, which doubles battery service life, load segments for scheduled shutdowns and maximized runtimes and a versatile design that allows the UPS to be mounted as a rack or as a tower. Optional Extended Battery Modules (EBMs) prolong battery backup times and ConnectUPS Web/SMNP/xHub card adapter expands control and monitoring of UPS and network devices.

Model Abstract 9910-P15
The IBM 9910 Model P15 Powerware 9125 1500 VA (120 Vac) protects equipment up to 1050 watts. This true online, double-conversion UPS features ABM, which doubles battery service life, load segments for scheduled shutdowns and maximized runtimes and a versatile design that allows the UPS to be mounted as a rack or as a tower. Optional Extended Battery Modules (EBMs) prolong battery backup times and ConnectUPS Web/SMNP/xHub card adapter expands control and monitoring of UPS and network devices.

Model Abstract 9910-P93
The 9910-P93 Powerware 9330 20 kVA protects equipment up to 14 kW. This compact three-phase online, double-conversion UPS integrates advanced technology, software and service capabilities into a single module. Optional Extended Battery Modules (EBMs), FC 6635, prolong battery backup times and ConnectUPS Web/SMNP/xHub card adapter, FC 2934, expands control and monitoring of the UPS and network devices. The P93 includes a one-year ProActive Service Plan. UPS installation and start-up services are included to provide a complete power protection solution.

Model Abstract 9910-EP5
The IBM 9910 Model EP5 Powerware Prestige 3000 is a 3.0 KVA UPS. It includes an AS/400 interface port, 15-foot AS/400 interface cable, and hot-swappable battery modules. It is a 208 Volt single-phase unit, 2100 Watts. It requires a 200 to 240 volt input and will provide 120/208 or 120/240 volt output through the Power-Pass Distribution Module.

Model Abstract 9910-EP8
The IBM 9910 Model EP8 Powerware Prestige 6000 is a 6.0 KVA UPS. It includes an AS/400 interface port, 15-foot AS/400 interface cable, and hot-swappable battery modules. It is a 208 Volt single-phase unit, 4000 Watts. It requires a 200 to 240 volt input and will provide 120/208 or 120/240 volt output through the Power-Pass Distribution Module.

**Model Abstract 9910-P30**
The IBM 9910 Model P30 Powerware 9125 3000 VA (208-240 Vac) protects equipment up to 2100 watts. This true online, double-conversion UPS features ABM, which doubles battery service life, load segments for scheduled shutdowns and maximized runtimes and a versatile design that allows the UPS to be mounted as a rack or as a tower. Optional Extended Battery Modules (EBMs) FC 6640, prolong battery backup times and ConnectUPS Web/SNMP/xHub card, FC 2934, adapter expands control and monitoring of UPS and network devices.

**Model Abstract 9910-P64**
The IBM 9910 Model P64 Powerware 9125 6000 VA (208-240 Vac) protects equipment up to 4200 watts. This true online, double-conversion UPS features ABM, which doubles battery service life, load segments for scheduled shutdowns and maximized runtimes and a versatile design that allows the UPS to be mounted as a rack or as a tower. Optional Extended Battery Modules (EBMs) FC 6641, prolong battery backup times and ConnectUPS Web/SNMP/xHub card, FC 2934, expands control and monitoring of UPS and network devices.

**Model Abstract 9910-P33**
The IBM 9910 Model P33 Powerware 5125 3000 VA (208-240 Vac) protects equipment up to 2700 watts. This high power density UPS features ABM, which doubles battery service life, a compact 3.5 inches (2U) rack design to conserve valuable rack space, hot-swappable electronics and battery modules to increase uptime and minimize maintenance interruptions. Optional Extended Battery Modules (EBMs), FC 6607, prolong battery backup times and ConnectUPS Web/SNMP/xHub card, FC 2934, adapter expands control and monitoring of the UPS and network devices.

**Model Abstract 9910-B31**
(No Longer Available as of July 28, 2000)

**Model Abstract 9910-B40**
(No Longer Available as of July 28, 2000)

**Model Abstract 9910-B52**
(No Longer Available as of July 28, 2000)

**Model Abstract 9910-B63**
(No Longer Available as of September 21, 1999)
Model Abstract 9910-B67
(No Longer Available as of September 21, 1999)

Model Abstract 9910-B69
(No Longer Available as of September 21, 1999)

Model Abstract 9910-B73
(No Longer Available as of September 21, 1999)

Model Abstract 9910-E01
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Model Abstract 9910-E02
(No Longer Available as of September 21, 1999)

Model Abstract 9910-E09
(No Longer Available as of July 28, 2000)

Model Abstract 9910-E20
(No Longer Available as of August 20, 2001)

Model Abstract 9910-EP6
(No Longer Available as of October 8, 2002)

Model Abstract 9910-EX3
(No Longer Available as of July 28, 2000)

Model Abstract 9910-080
(No Longer Available as of July 28, 2000)

Model Abstract 9910-140
(No Longer Available as of July 28, 2000)

Model Abstract 9910-B34
(No Longer Available as of October 8, 2002)

Model Abstract 9910-B36
(No Longer Available as of October 8, 2002)
Model Abstract 9910-B42
(No Longer Available as of October 8, 2002)

Model Abstract 9910-B46
(No Longer Available as of October 8, 2002)

Simple installation - compact size and weight

Tested and approved by IBM Server Group Power Systems Development to ensure they are compatible with the associated IBM hardware and can pass the same rigorous testing that IBM hardware is put through.

Most UPS units for AS/400-iSeries are "raven black".

All models include software (if necessary) and cords for start up.

With the IBM Uninterruptible Power Systems for AS/400-iSeries you get:
- Premium advanced element exchange warranty managed by IBM Global Services.
- Models Tested and approved by IBM Server Group Development
- Enhanced conditioning of utility power and battery backup
- Plug-and-play solutions
- User-replaceable, hot-swappable batteries
- Single source for IBM hardware and approved UPS solutions

Highlights for Models 9910-P10 and P15
- Advanced Battery Management (ABM) doubles battery service life and optimizes recharge time
- True online, double-conversion topology ensures continuous clean power.
- Extended Battery Modules and two load segments prolong backup times
- Hot-swappable batteries simplify service
- Bundled with Software Suite power management software to ensure data integrity
- Installable in 4-post rack (Feature 6630)

Highlights for Model 9910-P93
- Advanced Battery Management (ABM) doubles battery service life and optimizes recharge time
- True online, double-conversion topology ensures continuous clean power.
- Extended Battery Modules prolong backup times
• Comprehensive communication and user-interface

• Compact footprint includes 17 minutes of backup time at full load and maintenance bypass switch

• Bundled with Software Suite power management software to ensure data integrity

• Includes One-Year ProActive Service Plan

**Highlights for Models 9910-EP5 and EP8**

• True online, double-conversion topology ensures continuous, clean power
• Automatic internal bypass adds redundant power path
• External maintenance bypass (PowerPass) simplify service
• Cell Saver Technology increases battery life
• Extended Battery Modules prolong backup times
• Integrated power management with unattended shutdown capabilities
• Wide input voltage range helps extend battery life and maximize battery availability.

**Highlights for Models 9910-P30 and P64**

• Advanced Battery Management (ABM) doubles battery service life and optimizes recharge time
• True online, double-conversion topology ensures continuous clean power.
• Extended Battery Modules and load segments prolong backup times
• Hot-swappable batteries simplify service
• Bundled with Software Suite power management software to ensure data integrity

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**Description**

IBM offers true Online Single-Phase and Three-Phase Uninterruptible Power Systems (UPS) from Powerware.*

**Powerware** 9125** accommodates the power requirements of the entry level AS/400 - iSeries models. The 9125 is available in 1000VA, 1500VA, 3000VA and 6000VA models and features a compact, modular design that can be arranged in a tower configuration or easily rack-mounted.

All UPS solutions have been tested by IBM Server Group Power Systems Engineering specifically for the defined IBM hardware models ensuring coordinated operations to help maximize system availability.

**Battery Information**

Battery backup times (in minutes) stated for the batteries are new, fully charged, and full KVA load. Battery backup times are dependent on KVA load. For additional information on battery backup times refer to:
Year 2000
This is a third-party product. Powerware has represented to IBM that the product is Year 2000 ready. However, IBM does not itself make any representations nor give any warranty as to the Year 2000 readiness of this product. Contact Powerware with any questions regarding the Year 2000 readiness of this product.

Application Recommendations
Installation plans should evaluate all devices critical to systems availability, and assess each device power protection requirement. Contact IBM's Global Services for technical assistance.
A UPS provides continuously conditioned, digital quality power to the AS/400-iSeries, providing enhanced system availability to attached workstations, file servers and networks.

Investment Protection - Asset Protection
Helps protect assets (hardware, software); ample time is provided for automatic or user-initiated shutdown procedures. In many instances, system downtime may be reduced; a level of alternate power can ride through most utility disturbances.
The UPSs protect assets by detecting electrical utility anomalies and providing power for a limited period of time, when required. For example, in a IT system protected by a Powerware Prestige model, if the power outage continues the UPS will notify the system to start a controlled shutdown thus saving the customer's data.

User Productivity - Improved Worker Productivity
Application availability may be improved since the hardware may be less likely to be impacted by power disturbances.

Growth Enablement - Connectivity Improvements
A broad selection of software-configurable performance features, connectivity capabilities, and a flexible battery back-up system are offered; all are application adaptive and integrated into a single competitively priced UPS.

System Availability
Alternate power can support a system through most utility disturbances, the UPSs can reduce system downtime.
Battery expansion cabinets are available for all Powerware models to allow customization of battery protection time required to support specific processing applications.

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Models

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<th>Model</th>
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Customer Setup (CSU)
The 9910 UPS Models EP5, EP8, P10, P11, P15, P16, P30, P33 and P64 are designated as customer setup, which includes installation of two battery trays for the P64, each weighing 59 lbs. (27 kg.). If Models or features are to be rack installed and are not ordered with the iSeries rack, the customer will be responsible for the installation of external cables, UPS module, and battery module(s). Customers who request IBM service personnel to perform these activities are subject to a charge. Customer responsibilities for 9910 UPS Models P10, P11, P15, P16, P30, P33 and P64 include:

- Adequate site and system planning, and preparation
- Receipt, unpacking, and placement of the system unit
- Ordering, installing, and maintaining cables with associated parts for attaching to the iSeries model
- Using and following the problem determination procedures in the operators guide
- Installing UPS management software and setting UPS run-time parameters.

Powerware Installation and Start-UP for P93, P95
Models P93 & P95 include site evaluation, electrical installation, start-up and customer instruction. The 9910 UPS Models P93 and P95 are designated as a combination Powerware installation and customer setup. If feature number 6635 and/or 6636 is not ordered with the UPS (P93, P95) the customer will be responsible for installation of these features. Customers who request IBM service personnel to perform these activities are subject to a charge. Customer responsibilities for Models P93 and P95 include:

- Adequate site and system planning and preparation with support from IBM and Powerware personnel
- Receipt, positioning of the system unit at ground level to installation area
- Ordering, installing, and maintaining cables with associated parts for attaching to the pSeries model

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- Using and following the problem determination procedures in the operators guide

- Setting UPS run-time parameters in the OS

**P93 Installation Support Details**

The 9910 Model P93 has installation services included in the purchase price. The following activities will be provided:

**P93 SITE EVALUATION** Powerware site evaluation is available five days a week during normal business hours (5x8) prior to installation. During the evaluation, the Powerware Power Consultant will:

- Work with IBM Installation Planning Representatives to determine output connection requirements based on the customer's application and IT hardware configuration of new equipment supplied by IBM

- Contact customer to discuss UPS installation and output configuration If only new IBM supplied equipment will be connected to the UPS, a site visit will not be required. If other loads are to be on the UPS, then a site visit may be required. If a site visit is required, it will be scheduled with the customer

- Provide a site visit report to IBM, if applicable

**P93 INSTALLATION** Powerware Installation Service uses local licensed and insured contractors and installs per NEC, state and local codes according to manufacturer's guidelines. Installation carries a five year warranty and includes:

- Moving the UPS and Options Cabinet from the customer's loading dock or ground level to the installation area using customer provided freight elevator (if installation site is on a different floor)

- Uncrating, setting in place, and disposing of packing materials.

- Making electrical connections (input and output) including optional Output Connection feature (part number 97P2660, #9881) and External Battery Cabinet feature (part number 97P2663, #6635)

- Installation is performed five days a week during normal business hours (5x8)

**P93 START-UP** After installation is completed, the customer should contact Powerware Global Services at 1-800-843-9433, and provide the P93 serial numbers (Powerware and IBM) to schedule a start-up. At start-up, a Powerware technician/contractor will:

- Perform a visual and mechanical inspection
- Conduct an electrical pre-check
- Inspect DC connections
- Install interface cables and optional connectivity card features
• Perform initial UPS start-up
• Conduct customer operational training (same day as start-up)
• Start-up is performed five days a week during normal business hours (5x8)

The customer is responsible for installing and configuring the iSeries OS/400 UPS monitoring functions, and/or Powerware Software Suite. Free technical support is available at 1-800-925-4426 option 1.

Field support is provided by IBM Global Services, ITS organizations. Additional information will be available via the following Web sites:
  • Power Protection Services:

Devices Supported
Not available.

Model Conversions
Not available.

Once installed, 9910 UPS units cannot be upgraded via MES. Your initial installation should meet current and future requirements for your configuration.

Battery information for Powerware Models

Batteries should be charged for 24 hours upon receipt of the initial unit. Also, batteries need less than 24 hours of recharging after an extended outage to reach the fully stated run times.

Battery backup times stated for the batteries are: new, fully charged, and at full Watt load.

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To meet customer needs of prolonged operations during power outages, Powerware 9910 UPS solutions offer optional extended battery runtime (autonomy) options. In today's 7 x 24 business environment, continued availability along with application and safety considerations must be taken into account and estimated when calculating UPS battery backup (autonomy) runtimes.

For example, a typical battery backup runtime is 15 minutes. The recommended formula used to calculate runtime (RT) is: \( RT\text{ (min)} = \text{business} + (2 \times \text{system shutdown}) + \text{safety}. \)

- Approximately 80% of power outages are less than 5 minutes in duration. Using 5 minutes will ensure that if the typical power outage is less than 5 minutes, the application will not start a premature or unrecoverable shutdown.

- The National Power Laboratory (1990-1995) Power Quality Report indicates there may be consecutive power outages before power continuity is fully restored. By multiplying system/application time needs by two you allow for two consecutive power outages to occur while providing an adequate reserve of battery runtime to initiate a safe system shutdown during the second power outage.

- Allow for natural battery charge cycles, temperature variations and aging. Also take into account variations in business needs.

Find the correct UPS model then select the runtime required. If the power consumption of the equipment to be protected is unknown, use the maximum load (watts) number given for the UPS. For example, if the load requires less than 3kVA and the runtime is 15 minutes, the correct UPS will be the P30 and the correct quantity of FC 6640 would be one. One FC 6640 plus the standard internal batteries of the P30 will provide 25 minutes of battery backup (autonomy) runtime at the P30 maximum capacity of 2100 watts. NOTE: The runtime is total (standard internal batteries and optional EBMs) not additive.

**Battery Information**

Battery backup times (in minutes) stated for the batteries are new, fully charged, and full KVA load. Battery backup times are dependent on KVA load. For additional information on battery backup times refer to:


The output receptacles by model:

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<tr>
<td>5-15 (Qty 6)</td>
<td>P10, P15</td>
</tr>
<tr>
<td>IEC-320-C13 (Qty 4),</td>
<td></td>
</tr>
</tbody>
</table>
P93 Output Receptacles

Two types of output power distribution connection outlets (receptacles) are available, feature numbers 9880 and 9881. The base P93 includes one feature number 9880 which contains two 60A, 3-phase, 4-wire IEC309 460R9W connectors with appropriate circuit breakers and connectors. Each connector shall be on a maximum 50 foot cord. This feature number supports dual-redundant power cords of the base processor frame or CPU. The maximum quantity of feature number 9880 is one.

Optional output power distribution connections are available with FC 9881. Each feature number 9881 contains three 15 A to 30 A NEMA non or locking receptacles with appropriate circuit breakers and connectors (power cord). Each connector shall be on maximum 50 foot cord and wired into the Options Cabinet output distribution panel. The description of the Options Cabinet is as follows:

- Option Cabinet 20 kVA capacity, single feed, 208/208, maintenance bypass and 42-pole panel with output connection housing

- Valid receptacle types are: NEMA; 5-15R2, 5-20R2, L5-15R, L5-20R, 5-30R, L5-30R, 6-15R, L6-15R, 6-20R, L6-20R; and, L6-30R

  **Note:** 15 A and 20 A non-locking, low voltage (5-15R2 and 5-20R2) are duplex (two receptacles).

- The minimum quantity of feature number 9881 is zero

- The maximum quantity of feature number 9881 is six
- Feature numbers 9880 and 9881 will be installed to the P93 configuration at time of UPS installation

- The IEC and NEMA plug types used in feature numbers 9880 and 9881 correspond to IBM plug types

<table>
<thead>
<tr>
<th>IEC/NEMA Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC309 460R9W</td>
<td>N/A</td>
</tr>
<tr>
<td>5-15</td>
<td>4</td>
</tr>
<tr>
<td>5-20</td>
<td>30</td>
</tr>
<tr>
<td>L5-15</td>
<td>7</td>
</tr>
<tr>
<td>L5-20</td>
<td>8</td>
</tr>
<tr>
<td>L5-30</td>
<td>9</td>
</tr>
<tr>
<td>6-15</td>
<td>5</td>
</tr>
<tr>
<td>6-20</td>
<td>29</td>
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<td>L6-15</td>
<td>10</td>
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<tr>
<td>L6-20</td>
<td>11</td>
</tr>
<tr>
<td>L6-30</td>
<td>12</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P93 is not contained in this table, change the plug type on the equipment to match plug types available with feature numbers 9880 or 9881

**P95 Output Receptacles**

Three output power distribution connection outlets (receptacles) are available, feature numbers 9883, 9884, and 9885.

**CABLING OPTION A** (#9884) includes one 32A 3-phase commando 5-hole (TPN&E) 415 V socket (floor mountable, angled as per RS 352-2581) attached to 4 mm 2 5-core steel wire armoured (SWA), low smoke and fume (LSF)-type mains cable, 12 meters long; and one (1) unconnected 32A 3-phase commando 5-hole (TPN&E) 415 V plug (straight free plug as per RS 352-2294). Presentation: Cable to be pre-terminated to socket. Plug to be married to socket connector

**CABLING OPTION B** (#9885) includes three 32A 1-phase commando 3-hole (SPN&E) 240 V socket (floor mountable, angled as per RS 352-2547) each attached to 4 mm 2 3-core steel wire armoured (SWA), low smoke and fume (LSF)-type mains cable, 12 meters long; and (3) three unconnected 32A 1-phase commando 3-hole (SPN&E) 240 V plugs (straight free plug as per RS 352-2244). Presentation: Cable to be pre-terminated to socket. Plug to be married to socket connector.

**CABLING OPTION C** (#9883) includes three 16A 1-phase commando 3-hole (SPN&E) 240 V socket (floor mountable, angled as per RS 352-2531) each attached to 4 mm 2 3-core steel wire armoured (SWA), low smoke and fume (LSF)-type mains cable, 12 meters long; and (3) three unconnected 16A 1-phase commando 3-hole (SPN&E) 240 V plugs (straight free plug as per RS 352-2238). Presentation: Cable to be pre-terminated to socket.
Feature numbers 9883, 9884, and 9885 will be installed to the P95 configuration at time of UPS installation.

**P30 Output Receptacles**

When the 9910-P30 is employed in a rack installation (0551 type rack) or in a tower configuration for world trade countries, the P30 output (receptacle) configuration is four IEC-320-C13 (10A) and one IEC-320-C19 (16A). The 9910-P30 also includes five (5) output power cable consisting of four IEC-320-C13 to C14 (6 ft/1.8 m length) and one IEC-320-C19 to C20 (14 ft/4.4 m length). These power cables are located in the "Power Cord Kit" carton, IBM feature number 9830. A maximum of one feature number 9830 is supported.

When the 9910-P30 is employed in a tower configuration in NEMA-type countries, the P30 will include one NEMA-type PowerPass Distribution Module (PDM) IBM feature number 6570, which contains the following output (receptacle) connections. IBM plug types supported are referenced.

**Feature 6570 output connection table**

<table>
<thead>
<tr>
<th>NEMA Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-15 (qty 2)</td>
<td>4</td>
</tr>
<tr>
<td>6-15/6-20 (qty 4)</td>
<td>5/29</td>
</tr>
<tr>
<td>L6-15 (qty 2)</td>
<td>10</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P30 is not contained in this table, change the plug type on the equipment to match plug types available with feature number 6570.

Power electrical cable installation diagrams are at the following Web sites:

- **NEMA countries:**
  

- **IEC countries:**
  

**P64 Output Receptacles**

When the P64 is used as a RACK model and the PDU is feature number 5160 (NEMA type), none of the above power cables are needed. The power cord shipped for the PDU is used from the P64 to the wall (mains). Feature number 2970 is used to the NEMA PDU to the output receptacle of the P64. Feature number 2970 is one (1) power NEMA L6-30P to NEMA L6-30R (6 ft./1.8 m length).

When the P64 is used as a RACK model and the PDU is feature number 5161 (IEC type), the above cables are needed. Feature number 2971 is used to connect the IEC PDU to the output receptacle of the P64. Feature number 2971 is one power cord, NEMA L6-30P to IEC309 (P+N+G) 32A receptacle (6 ft./1.8 m length).

When the 9910-P64 is employed in a tower configuration in NEMA-type countries, the P64 will include one NEMA-type PowerPass Distribution Module (PDM) IBM feature number 6571, which contains the following output (receptacle) connections. IBM plug types supported are referenced.
Feature 6571 output connection table

<table>
<thead>
<tr>
<th>NEMA Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-15 (qty 2)</td>
<td>4</td>
</tr>
<tr>
<td>6-15/6-20 (qty 4)</td>
<td>5/29</td>
</tr>
<tr>
<td>L6-15 (qty 2)</td>
<td>10</td>
</tr>
<tr>
<td>L6-30 (qty 1)</td>
<td>12</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P64 is not contained in this table, change the plug type on the equipment to match plug types available with feature number 6571.

When the 9910-P64 is employed in a tower configuration in world trade countries, the P64 will include one IEC-type PowerPass Distribution Module (PDM) IBM feature number 6572, which contains output (receptacle) connections described in the feature number 6572 output connection table. IBM plug types supported are referenced.

This 9910-P64 configuration includes two sets of five output power cables consisting of: four (4) IEC-320-C13 to C14 (6 ft/1.8 m length) and one IEC-320-C19 to C20 (14 ft/4.4 m length). These power cables are located in the "Power Cord Kit" cartons, IBM feature number 9830. A maximum of two feature number 9830s are supported. In addition to the two feature number 9830s, feature number 6572 contains two IEC-320-C19 to C20 (14 ft/4.4 m length) power cords and are located in the 6572 carton.

Feature 6572 output connection table

<table>
<thead>
<tr>
<th>IEC Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC-320-C13 (10A) (qty 8)</td>
<td>-</td>
</tr>
<tr>
<td>IEC-320-C19 (16A) (qty 4)</td>
<td>-</td>
</tr>
<tr>
<td>IEC309 (P+N+G) (32A) (qty 1)</td>
<td>46</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P64 is not contained in this table, use the output power cables contained in feature number 9830(s). Power electrical cable installation diagrams are at the following Web sites:

- NEMA countries:

- IEC countries:

**Electrical/Mains Cable information for Powerware Models**
P30 Input (Mains) Power Cord
The input (mains) power connection to the 9910-P30 is an IEC-320-C20 (16A) connector. The input (mains) power cord from the UPS to the utility (mains) is determined based upon country or locality. Refer to the following table:

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Plug Type</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>9860</td>
<td>11</td>
<td>NEMA L6-20</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9861</td>
<td>11</td>
<td>NEMA L6-20</td>
<td>6 ft/1.8m</td>
</tr>
<tr>
<td>9866</td>
<td>18</td>
<td>CEE7 VII</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9867</td>
<td>22</td>
<td>SABS 164</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9868</td>
<td>25</td>
<td>CEI 23-16</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9871</td>
<td>46</td>
<td>IEC309 (P+N+G) 16A</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9872</td>
<td>32</td>
<td>SII 32-1971</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9874</td>
<td>54</td>
<td>SAA-AS 3112</td>
<td>14 ft/4.4m</td>
</tr>
<tr>
<td>9875</td>
<td>64</td>
<td>IEC 60083-A5</td>
<td>14 ft/4.4m</td>
</tr>
</tbody>
</table>

Conversions kit are available from Powerware Global Services to convert the P30 plug input (mains) type to L6-30, IBM plug type 12. The input power cord, Powerware part number 103003074-002, description; IEC-320-C19 to NEMA L6-30P, 8 foot, includes an inline circuit breaker required by the P30. P30 plug input (mains) type to IEC309 CEE17 (P+N+G) 32A, IBM plug type 46. The input power cord, Powerware part number 103002846-3901, description; IEC-320-C19 to IEC309 CEE17 (P+N+G) 32A, 1.8 meter, includes an inline circuit breaker required by the P30. For more information contact your local Powerware Global Services Center or visit Web site at:

http://www.powerware.com

P64 Input (Electrical/Mains) Cable
The input (mains) power connection to the 9910-P64 is a NEMA L6-30AR (30A) connector. The input (mains) power cord from the UPS to the utility (mains) is determined based upon country or locality. Refer to the following table:

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Plug Type</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1420</td>
<td>12</td>
<td>NEMA L6-30</td>
<td>14 ft/4.4 m</td>
</tr>
<tr>
<td>1421</td>
<td>12</td>
<td>NEMA L6-30</td>
<td>6 ft/1.8 m</td>
</tr>
<tr>
<td>1422</td>
<td>40</td>
<td>RS 3750</td>
<td>6 ft/1.8 m</td>
</tr>
<tr>
<td>1423</td>
<td>40</td>
<td>RS 3750</td>
<td>14 ft/4.4 m</td>
</tr>
<tr>
<td>1424</td>
<td>46</td>
<td>IEC309 (P+N+G) 32A</td>
<td>14 ft/4.4 m</td>
</tr>
</tbody>
</table>

IBM support services provide:

- 800-IBM-SERV dispatch
- 24-hour availability
- Quick callback
- Single point of contact for service

Other options available from Powerware include: Communications adapters.

**Physical Specifications**

**Note:** Physical Specifications subject to change. More detailed Specifications can be obtained from your IBM Representative or at:


Model P93 (20 kVA) consists of two cabinets: UPS and Options Cabinet.

**UPS Cabinet:**

- Width: 56 cm (22 in)
- Depth: 79 cm (31 in)
- Height: 114 cm (45 in)
- Weight: 437.7 kg (965 lbs)

**P93 Options Cabinet** containing Maintenance Bypass, Output Circuit Breakers and Power Distribution:

- Width: 56 cm (22 in)
- Depth: 97 cm (38 in)
- Height: 114 cm (45 in)
- Weight: 90 kg (200 lbs)

**Optional Battery Cabinet (6635) for P93:**

- Width: 52 cm (20.5 in)
- Depth: 79 cm (31 in)
- Height: 114 cm (45 in)
- Weight: 272 kg (600 lbs)

**Model P10 (1000VA):**

- Width: 43.0 cm (17 in)
- Depth: 49.4 cm (19.4 in)
- Height: 8.9 cm (3.5 in)
- Weight: 15 kg (34 lbs)
Model P15 (1500VA):
- Width: 43.0 cm (17 in)
- Depth: 49.4 cm (19.4 in)
- Height: 8.9 cm (3.5 in)
- Weight: 23 kg (50 lbs)

Model EP5 (3000VA):
- Width: 5.61 inches
- Depth: 15.75 inches
- Height: 9.91 inches
- Weight Power Processor Unit: 17 pounds
- Weight Power Distribution Module: 47 pounds

Model EP8:
- Width: 9.9 inches
- Depth: 15.75 inches
- Height: 11.2 inches
- Weight Power Processor Unit: 39 pounds
- Weight Power Distribution Module: 75 pounds

Model P30 (3000VA):
- Width: 43.18 cm (17 in)
- Depth: 60.71 cm (23.9 in)
- Height: 8.89 cm (3.5 in) 2U
- Weight: 36.97 kg (81.5 lbs)

Optional Battery Module (6640) for P30:
- Width: 43.18 cm (17 in)
- Depth: 62.87 cm (24.75 in)
- Height: 8.89 cm (3.5 in) 2U
- Weight: 42.18 kg (93 lbs)

Optional PowerPass Distribution Module (6570) for P30:
- Width: 43.18 cm (17 in)
- Depth: 62.87 cm (24.75 in)
- Height: 8.89 cm (3.5 in)
- Weight: 22.68 kg (50 lbs)

Model P33 (3000VA):
- Width: 43.9 cm (17.3 in)
- Depth: 62.2 cm (24.5 in)
- Height: 8.89 cm (3.5 in) 2U
- Weight: 40.5 kg (89 lbs)

Optional Battery Module (6607) for P33:
- Width: 48.3 cm (19 in)
- Depth: 62.2 cm (24.5 in)
• Height: 8.89 cm (3.5 in) 2U
• Weight: 55 kg (121 lbs)

Model P64 (6000VA):
• Width: 43.18 cm (17 in)
• Depth: 63.35 cm (24.94 in)
• Height: 21.92 cm (8.63 in) 5U
• Weight: 93.44 kg (206 lbs)

Optional Battery Module (6641) for P64:
• Width: 43.18 cm (17 in)
• Depth: 62.87 cm (24.75 in)
• Height: 13.35 cm (5.25 in) 3U
• Weight: 76.66 kg (169 lbs)

Optional PowerPass Distribution Module (6571) for P64:
• Width: 43.18 cm (17 in)
• Depth: 62.87 cm (24.75 in)
• Height: 13.35 cm (5.25 in)
• Weight: 48.08 kg (106 lbs)

Optional PowerPass Distribution Module (6572) for P64:
• Width: 43.18 cm (17 in)
• Depth: 62.87 cm (24.75 in)
• Height: 13.35 cm (5.25 in)
• Weight: 48.08 kg (106 lbs)

Optional ConnectUPS Relay Card and Interface (2936) for P30, P33, P64 and P93:
• Width: inserts into X-Slot
• Depth: inserts into X-Slot
• Height: inserts into X-Slot
• Weight: 2.2 kg (1 lb)

Optional ConnectUPS Web/SNMP Adapter (2935) for P95:
• Width: 8.6 cm (3.4 in)
• Depth: 13.4 cm (5.3 in)
• Height: 2.7 cm (1.1 in)
• Weight: 0.2 kg (0.4 lb)

Optional Environmental Monitoring Probe (2938) for Feature Numbers 2934 and 2935:
• Width: 3.76 cm (1.48 in)
• Depth: 5.76 cm (2.26 in)
• Height: 2.93 cm (1.15 in)
• Weight: 34g (1.2 oz)

**Operating Environment**
Model P93:
- Temperature: 0°C to +40°C (32°F to 104°F)
- Relative Humidity: 95% maximum, noncondensing
- Noise Rating: Less than 60 dBA
- Input Voltage: 120/208Vac, 60Hz, 3-phase + GND (rectifier); 208Y/120 Vac, 60 Hz, 3-phase + N + GND (Bypass)

Models P10 and P15:
- Temperature: 0°C to +40°C (32°F to 104°F)
- Relative Humidity: 0% to 90% noncondensing
- Noise Rating: 50 dB in normal mode
- Electrical power: 80-288 volts 45 to 60 hertz

Model EP5:
- Temperature: 10°C to 40°C
- Noise Rating: 50dBA @ 1 meter
- Relative Humidity: 5-95% noncondensing
- Electrical power: 160-276 volts 45-65 Hertz

Model EP8:
- Temperature: 10°C to 40°C
- Noise Rating: 50dBA @ 1 meter
- Relative Humidity: 5-95% noncondensing
- Electrical power: 176-276 volts 45-65 Hertz

Model P30:
- Temperature: 0°C to +40°C (32°F to 104°F)
- Relative Humidity: 0% to 90% noncondensing
- Noise Rating: Less than 45 dBA (on utility); Less than 50 dBA (on battery)

Model P33:
- Temperature: 0°C to +40°C (32°F to 104°F)
- Relative Humidity: 0% to 95% noncondensing
- Noise Rating: Less than 40 dBA typical

Model P64:
- Temperature: 0°C to +40°C (32°F to 104°F)
- Relative Humidity: 5% to 90% noncondensing
• Noise Rating: Less than 45 dBA (on utility); Less than 50 dBA (on battery)


**Limitations**
Not available.

**Hardware Requirements**
For the U.S., allowable voltages are 115, 120, 208, and 240. Allowable voltages and frequency per geography will be displayed in the Configurator. An error message will be presented if selecting an invalid voltage/frequency.

**AS/400-iSeries UPS Models**
The AS/400 interface cable ships with the UPS. You should install the cable before powering up the UPS.

**Software Requirements**
None.

**Publications**
Installation and Operator's manuals are shipped with the products. Additional copies will be available immediately from the associated UPS supplier. For additional information on Installation and Operator's manuals go to:

http://www.oem.powerware.com/ibm-ups

**Features -- Specify/Special/Exchange**

<details>
<summary>No Charge Specify Codes</summary>
None.
</details>

<details>
<summary>Special Feature Codes -- Chargeable</summary>
</details>

<details>
<summary>Feature Exchanges</summary>
</details>
### Total System Package (TSP) (United States only)
- The UPSs are shipped with the AS/400s-iSeries model. The TSP feature code is 5000.

<table>
<thead>
<tr>
<th>Description</th>
<th>Model/Feature Description</th>
<th>Feature Number</th>
<th>Feature Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSP Specify code (United States only)</td>
<td>All Models</td>
<td>5000</td>
<td></td>
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<tr>
<td>Battery Pack</td>
<td>P10, P11</td>
<td>6604</td>
<td></td>
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<tr>
<td>Battery Pack</td>
<td>P15, P16</td>
<td>6605</td>
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<td>P30</td>
<td>6640</td>
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<td>6607</td>
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<td>Battery Pack</td>
<td>P64</td>
<td>6641</td>
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<td>Battery Pack (United States only)</td>
<td>P93</td>
<td>6635</td>
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<td>Battery Pack (EMEA only)</td>
<td>P95</td>
<td>6636</td>
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<tr>
<td>Powerware Battery Pack (3000VA and 6000VA)</td>
<td>EP5, EP8</td>
<td>6603</td>
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### Uninterruptible Power Systems for AS/400-iSeries

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine</th>
<th>Model</th>
<th>Feature</th>
<th>Part</th>
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</thead>
<tbody>
<tr>
<td>Powerware 9330 20000VA</td>
<td>9910</td>
<td>P93</td>
<td></td>
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</tr>
<tr>
<td>Powerware 9125 3000VA</td>
<td>9910</td>
<td>P33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powerware 9125 6000VA</td>
<td>9910</td>
<td>P64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powerware 9125 1000VA</td>
<td>9910</td>
<td>P10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powerware 9125 1500VA</td>
<td>9910</td>
<td>P15</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Description</th>
<th>Model Number to be used with</th>
</tr>
</thead>
<tbody>
<tr>
<td>9910-6566</td>
<td>Powerware PPDM (208V)</td>
<td>9910-EP8</td>
</tr>
<tr>
<td>9910-6562</td>
<td>Powerware PPDM (208V)</td>
<td>9910-EP5</td>
</tr>
</tbody>
</table>

### Special Features - Initial Orders

**CONNECTIVITY**
- ConnectUPS Web/SNMP/xHUB Card for P10, P11, P15, P16, P18, P22, P23, P30, P33, P64, and P93
- ConnectUPS Web/SNMP Adapter for P95
- X-Slot Relay Card for P10, P11, P15, P16, P18, P22, P23, P30, P33, P64, and P93
- Environmental Monitoring Probe (EMP) for FC 2934 or 2935

EXTENDED BATTERY BACKUP (AUTONOMY) RUNTIME
- Extended Battery Module (EBM) for P10, P11
- Extended Battery Module (EBM) for P15, P16
- Extended Battery Module (EBM) for P60, P61
- Extended Battery Module (EBM) for P33
- Extended Battery Module (EBM) for P18
- Extended Battery Cabinet (EBC) for P93
- Extended Battery Cabinet (EBC) for P95
- Extended Battery Module (EBM) for P30
- Extended Battery Module (EBM) for P64

OUTPUT RECEPTACLES - BYPASS
- Power Distribution (PDU) for P60
- NEMA PowerPass Distribution Module (PDM) for P30
- NEMA PowerPass Distribution Module (PDM) for P64
- IEC PowerPass Distribution Module (PDM) for P64

RACK INSTALLATION
- Rail Kit - 2U Devices for P10, P11, P15, P16, P18, P30, P33, 6604, 6605, 6607, 6608 and 6640
- Rail Kit - 3U & 5U Devices for P64, 6641
- Rack Mount Bracket Kit for P64, 6641
- Rack Mount Bracket Kit for P30, 6640

SERVICE PLANS
- ProActive Warranty Concurrent for P93
- ProActive Warranty Non-concurrent for P93

OPTIONS/BYPASS CABINETS
- Options Cabinet for P93
- Options Cubicle for P95

INSTALLATION
- Installation for P93
- Installation for P95

(#)2934) ConnectUPS X-Slot Web/SNMP/xHUB Card
The ConnectUPS X-Slot Web/SNMP/xHUB card, FC 2934, enables you to monitor and control remote UPSs from a Web browser or industry-standard network management systems (NMS) and communicates over 10/100BaseT Ethernet connections, and serves as a power-protected switching hub to support three additional 10/100BaseT links. ConnectUPS when used with Powerware
LanSafe or NetWatch software is the recommended method of communicating between UPS and LPAR pSeries servers.

**Real-time monitoring**
Gain up-to-the-minute assurance that computing and communication systems are receiving the continuous, clean power they demand. Through easily navigable Web pages, network administrators can check system status and view critical meter information, such as input and output voltage, UPS load, battery voltage and condition, at any time.

**Visibility via the Web**
Supports standard Web browsers, such as Internet Explorer or Netscape. Displays have been designed also for simplified viewing using mobile phone or PDA (personal digital assistant) browsers - enabling systems managers to stay informed even when away from their mission-critical workstations and servers.

**Integration with standard SNMP management software**
You can use an industry-standard network management system (NMS) - such as IBM Director, Tivoli, HP OpenView, or CiscoWorks 2000 - to monitor power conditions across the enterprise and to manage remote UPS systems and the operating systems they protect.

**Automatic notification of alarm conditions**
ConnectUPS sends real-time alert notifications to four designated recipients via email, PCS mobile phone, or pager, and via SNMP traps to an NMS or network messaging to Powerware NetWatch software. Each recipient has the option of receiving real-time event messages, daily status report based on criticality, containing data and event log files, or a combination of routine reports and event notifications.

**Full support for UPS MIB and beyond**
For monitoring and managing remote UPSs through an NMS, ConnectUPS supports not only the standard UPS MIB (management information base) SNMP structure, but also Powerware's unique extensions to that MIB structure, which enable advanced functions that are not addressed in the RFC-1628 standard.

**Remote administration of UPSs**
From a Web browser or NMS, which may be hundreds or thousands of miles away, a system administrator can shut down or reboot a remote UPS, perform remote UPS battery tests, and set up scheduled shutdowns of UPSs and associated servers. The ability to shut down or restart systems without a site visit dramatically reduces field service expense and response time. Scheduled shutdowns can be devised to conserve power or tighten security during specific time periods, such as evenings or weekends.

**Orderly shutdown of remote operating systems**
When alarm conditions persist for a specified period, from 1 to 600 seconds, the ConnectUPS initiates orderly shutdown of affected equipment. Using NetWatch software (which is included with ConnectUPS products and loaded on the protected computers), up to 255 AIX, Linux, UNIX, Windows, Novell and Macintosh computers can be gracefully shut down without operator intervention. This capability ensures data integrity during a power outage that exceeds UPS backup time.

The system manager automatically receives warning messages when (A) the UPS has shifted to battery power, (B) battery power is getting low, or (C) orderly shut-down procedures are being initiated. You define exactly how to manage this shutdown - such as how long after going to to battery...
power to begin shutdown, and how to stage the shutdown of servers by importance. When used with 9910-P10, P11, P15, P16, P18, P22 P23, P30 (without FC 6570 or 6571) or P33 UPSs, ConnectUPS supports individual control of "load segments" (groups of outlets). ConnectUPS detects these load segments and provides the appropriate level of service to each, as configured by the system administrator.

**Track and record detailed historical data**
ConnectUPS has built-in data and event logs that track and record specific power-related occurrences over time, at user-defined increments as fine as one-minute intervals.

**Graph historical trends for rapid analysis**
A JAVA applet on ConnectUPS graphs data and event log values over time making it easy to analyze chronic power problems and identify trends and cause-and-effect relationships. Zoom and data-masking functions pinpoint specific anomalies for further investigation. Text-based event logs contain easy-to-understand event descriptions with corresponding date and time stamp.

**Integrated switching hub capability**
ConnectUPS serves double duty as a switching hub for three additional power (UPS) protected 10/100BaseT Ethernet connections, thereby eliminating the expense of buying a separate switching hub and a UPS to protect it.

**Monitoring remote environmental conditions**
ConnectUPS interworks with the Powerware Environmental Monitoring Probe (EMP), FC 2938, to remotely monitor the ambient temperature and humidity of the remote environment, as well as the status of two additional contact devices, such as a smoke detector or open-door sensor. This information can be used to trigger alarm notifications and automated shutdown.

**In-service installation and upgrades**
ConnectUPS can be installed without interrupting critical loads, and can be easily updated over network connections. A simple network-based utility is used to discover and update multiple ConnectUPS modules on the network.

**Software to Application Matrix**
Use the following table to determine if FC 2934 is right for your application. And to select the correct Powerware software.

<table>
<thead>
<tr>
<th>Application</th>
<th>LS</th>
<th>NW</th>
<th>PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single pSeries (serial/TTY) non-LPAR</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
<tr>
<td>Single pSeries (network) non-LPAR</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
<tr>
<td>Single pSeries (LPAR)</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
<tr>
<td>Multiple pSeries (non-LPAR)</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
<tr>
<td>Multiple pSeries (LPAR)</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
<tr>
<td>IBM Director network device</td>
<td>X(1)</td>
<td>X(1)</td>
<td>X(1)</td>
</tr>
</tbody>
</table>

**Note:** (1) Co-requisite FC 2934 or 2935 ConnectUPS Web/SNMP network card/adapter.
**Note:** UPS for iSeries applications utilize OS/400 UPS monitoring functions and FC 2936. Legend: LanSafe version 5 (LS), NetWatch (NW) and Powerware Extension for IBM Director (PE).

### Comparing Powerware Software

A matrix of various features and benefits of Powerware software offerings (included free-of-charge) follow:

<table>
<thead>
<tr>
<th>UPS Application</th>
<th>Monitoring</th>
<th>Shutdown</th>
<th>GUI</th>
<th>Email/SMTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>LanSafe</td>
<td>Y</td>
<td>Y</td>
<td>Y/Y</td>
<td>Y/Y</td>
</tr>
<tr>
<td>NetWatch</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>N/N</td>
</tr>
<tr>
<td>ConnectUPS Web/SNMP Card</td>
<td>Y(2)</td>
<td>Y(3)</td>
<td>Y</td>
<td>Y/Y</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UPS Application</th>
<th>Security SSL/SSH</th>
<th>Ambient Temp/Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LanSafe</td>
<td>N/N</td>
<td>N/N</td>
</tr>
<tr>
<td>NetWatch</td>
<td>N/N</td>
<td>N/N</td>
</tr>
<tr>
<td>ConnectUPS Web/SNMP Card</td>
<td>Y/Y</td>
<td>Y(4)/Y(4)</td>
</tr>
</tbody>
</table>

**Note:** (2) Via Web Browser, LanSafe or Network Management System (e.g. IBM Director, Tivoli).

**Note:** (3) In conjunction with NetWatch software.

**Note:** (4) With optional FC 2938 EMP (Environmental Monitoring Probe) device attached. SSL (Secure Socket Layer).

### Characteristics

- Attributes provided:
  - ConnectUPS Web/SNMP Card
  - One (1) RJ45 to DB9M configuration cable (6 ft/1.8 m length)
  - One (1) CD-ROM containing Powerware Software Suite (LanSafe, Netwatch)
  - User's Guide
  - Mounting hardware.
- FC 2934 is valid for 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33, P64 and P93 UPSs.
  - Minimum required: 0
  - Maximum allowed: 1(5), 2(6)

**Note:** (5) A maximum of one (1) FC 2932, 2933, 2934 or 2936 is supported for 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33 and P64 UPSs.

**Note:** (6) A maximum of two (2) FC 2932, 2933, 2934 or 2936 are supported on 9910-P93. UPS.

### Technical Specifications

- Installation is hot-pluggable
- Protocol support: HTTP, SNMP, DHCP, bootp, ARP, RARP, Telnet, SMTP, TFTP, WAP
- **Network support:** Ethernet 10/100 BaseT
- **Supported MIB:** Powerware MIB, UPS Standard MIB RFC1628
- **Netwatch Client O/S supported for shutdown:** AIX 4.x, 5.x, Windows 9x, Windows XP, Windows 2000/NT, Novell, NetWare 4.x, 5.x and 6.0, UNIX, Compaq Tru64 4.x, 5.x, HP-UX 10.10, 10.20, 10.30, 11.00, Linux with kernel 2.0 and higher (x86) and (AXP), SGI IRIX 6.x w/MIPS, Solaris 2.x, 8 (SPARC), Solaris 2.x with SunOS 5.6,7,8(x86), UnixWare 7.1 (x86), MacOS X (Darwin). For latest OS compatibility, visit powerware.com
- **Security:** Secure Socket Layer (SSL) and SSH public key encryption method and 512 bit encryption support
- **Local language support:** English (default) and Chinese. Future firmware (FW) releases will include; Spanish, Russian, French, Portuguese German and Italian. FW upgrades are free-of-charge and distributed through www.powerware.com
- **Switching hub:** Yes (three 10/100BaseT connections)
- **UPS Slot type:** X-slot
- **Power input:** 9VDC from UPS
- **Dimensions L x W x H:** 4.7 x 4.5 x 1.5 (inches), 120 x 114 x 39 (mm)
- **Weight:** 6 oz, 840 g
- **Regulatory FCC Class B**

For more information on ConnectUPS X-Slot Web/SNMP/xHub Card, please visit:

http://www.powerware.com/UPS/Connectivity.asp

For additional supported operating systems and information about Powerware UPS, network, enterprise-wide monitoring and control software please visit:

http://www.powerware.com/software/products.asp

**(#2935) ConnectUPS-E Web/SNMP Adapter**

The ConnectUPS-E (external) Web/SNMP adapter, FC 2935, enables you to monitor and control remote UPSs from a Web browser or industry-standard network management systems (NMS) and communicates over 10/100BaseT Ethernet connections. ConnectUPS-E when used with Powerware LanSafe or NetWatch software is the recommended method of communicating between UPS and LPAR pSeries servers.

**Real-time monitoring**

See FC 2934.

**Visibility via the Web**

See FC 2934.

**Integration with standard SNMP management software**

See FC 2934.

**Automatic notification of alarm conditions**

See FC 2934.

**Full support for UPS MIB and beyond**
See FC 2934.

**Remote administration of UPSs**
See FC 2934.

**Orderly shutdown of remote operating systems**
See FC 2934.

**Track and record detailed historical data**
See FC 2934.

**Graph historical trends for rapid analysis**
See FC 2934.

**Monitoring remote environmental conditions**
See FC 2934.

**In-service installation and upgrades**
See FC 2934.

**Software to Application Matrix**
See FC 2934.

**Comparing Powerware Software**
See FC 2934.

**Characteristics**

- Attributes provided:
  - ConnectUPS-E Adapter
  - One (1) 9PinM (P95) to 25Pin F (ConnectUPS-E) configuration cable (6)
  - One (1) CD-ROM containing Powerware Software Suite (LanSafe, Netwatch
  - User's Guide
  - Mounting hardware
- FC 2935 is valid for 9910-P95 UPS.
  - Minimum required: 0
  - Maximum allowed: 1

**Technical Specifications**

- Installation is hot-pluggable
- Protocol support: HTTP, SNMP, DHCP, bootp, ARP, RARP, Telnet, SMTP TFTP, WAP
- Network support: Ethernet 10/100 BaseT
- Supported MIB: Powerware MIB, UPS Standard MIB RFC1628
- Netwatch Client O/S supported for shutdown: AIX 4.x, 5.x, Windows 9x, Windows XP, Windows 2000/NT, Novell, NetWare 4.x, 5.x and 6.0, UNIX, Compaq Tru64 4.x, 5.x, HP-UX 10.10, 10.20, 10.30, 11.00, Linux with kernel 2.0 and higher (x86) and (AXP), SGI IRIX 6.x w/MIPS, Solaris 2.x, 8 (SPARC), Solaris 2.x with SunOS 5,6,7,8(x86), UnixWare 7.1 (x86), MacOS X (Darwin). For latest OS compatibility, visit powerware.com
- Security: Secure Socket Layer (SSL) and SSH public key encryption method and 512 bit encryption support
- Local language support: English (default) and Chinese. Future firmware (FW) releases will
include; Spanish, Russian, French, Portuguese German and Italian. FW upgrades are free-of-
charge and distributed through www.powerware.com
- Switching hub: No
- UPS Slot type: External (attached to rear of UPS)
- Power input: 9VDC from UPS
- Dimensions L x W x H 5.3 x 3.4 x 1.1 (inches), 134 x 86 x 27 (mm)
- Weight: 6 oz, 840 g
- Regulatory FCC Class B

For more information on ConnectUPS X-Slot Web/SNMP/xHub Card, please visit:

http://www.powerware.com/UPS/Connectivity.asp

For additional supported operating systems and information about Powerware UPS, network,
enterprise-wide monitoring and control software please visit:

http://www.powerware.com/software/products.asp

(#2936) X-Slot Relay Interface Card
Powerware X-Slot relay interface card provides shutdown and monitoring of UPS status through a
connected iSeries computer. The relay interface card provides the essential dry-contact interface
between your Powerware UPS and any relay-connected computer, including the iSeries (AS/400), as
well as a variety of industrial applications. The X-Slot relay card is the recommended method of
communicating between UPS and iSeries (AS/400) servers.
The X-slot relay interface card is designed to function with all Powerware UPS products equipped for
X-slot communications, 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33, P64 and P93. The relay
interface card includes a remote shutdown feature, using which the UPS shutdown is performed by
connecting the relay interface card shutdown pin (15) to +12VDC (Pin 13) for a minimum of 5
seconds.

Features and Benefits
- Provides isolated dry contact Form-C relay outputs for "utility failure," "low battery," or "on
  bypass"
- User-selectable "normally open" (N/O) or "normally closed" (N/C) contacts
- Shutdown function to remotely shutdown UPS
- Hot-swappable
- DB-15 output connection; terminal block outputs on X-slot card
- Works with any Powerware UPS equipped with an X-slot
- Increases reliability and system availability X-slot Relay Interface Card supports: iSeries UPS
  monitoring functions

Characteristics
- Attributes provided:
  - X-Slot Relay Card
  - One (1) UPS to iSeries (MT 9406) interface cable (25 ft/7.6 m length)
User's Guide
Mounting hardware
- FC 2936 is valid for 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33, P64 and P93 UPS.
  - Minimum required: 0
  - Maximum allowed: 1(1), 2(2)*

Note: (1) A maximum of one (1) FC 2932, 2933, 2934 or 2936 is supported for 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33 and P64 UPSs.

Note: (2) A maximum of two (2) FC 2932, 2933, 2934 or 2936 are supported on 9910-P93.

Technical Specifications
- Installation is hot-pluggable
- Local language support: None required
- Supported contacts: Line fail and low battery (9910-P10, P11, P15, P16, P18, P22, P23, P30, P33, P64 and P93) and Bypass (9910-P93)
- UPS Slot type: X-slot
- Power input: VDC from UPS
- Dimensions L x W x H 4.7 x 4.5 x 1.5 (inches), 120 x 114 x 39 (mm)
- Weight: 6 oz, 840 g
- Regulatory: None

For more information on X-Slot Relay Interface Card, please visit:

http://www.powerware.com/UPS/Connectivity.asp

(#2938) Environmental Monitoring Probe
The Environmental Monitoring Probe (EMP) enables you to remotely monitor environmental conditions as easily as you monitor power condition Using a standard Web browser, you can view the ambient temperature and humidity of the remote environment, as well as the status of two additional contact devices, such as a smoke detector or open-door sensor.

The EMP can be used with any Powerware UPS equipped with Powerware ConnectUPS X-Slot Web/SNMP Card, FC 2934; or, ConnectUPS-E Web/SNMP adapter, FC 2935, (the device that connects the UPS to an Ethernet network or the Internet).

Characteristics
- Enables measurement of ambient temperature (0-80 C) and humidity (10-90%). Constantly monitor sudden or gradual changes in the environment
- Monitor the status of two (2) additional user-supplied contact devices/sensors. Monitor and detect smoke, open door, water on floor or any other two sensors attached to the EMP's contact closure terminal
- Monitor and Manage via HTTP Web Browser. Remotely monitor and manage all environmental sensors from anywhere on the Internet with standard Web Browser
- Event history log captures event changes
- Stay informed. Conveniently receive alarms on environmental changes via SNMP and email through SMTP (pager, WAP mobile phone, PDA)
- Take action. Automatically or manually shutdown connected computer systems if
environmental condition alarm limits are met. Send SNMP alarms to a Network Management System.

- Attributes provided:
  - EMP
  - One (1) CAT5 cable (6 ft/1.8 m length) which connects the EMP to the
  - User's Guide
  - Hardware (zip ties and velcro mounting pads)

**Pre-requisite: 9910-2934 or 9910-2935**
- For 9910-P10, P11, P15, P16, P18, P22, P23, P30, P33, P64 and P93 UPS with FC 2934; or, 9910-P95 UPS with FC 2935
  - Minimum required: 0
  - Maximum allowed: 1(1)

**Note:** (1) A maximum one (1) 2938 per 2934 or 2935.

**Technical Specifications**
- Protocol support: HTTP, SNMP, DHCP, bootp, ARP, RARP, Telnet, SMTP TFTP, WAP
- Network support: Ethernet 10/100 BaseT
- Supported MIB: Powerware MIB, RFC1628 MIB
- Netwatch Client O/S supported for shutdown: AIX 4.x, 5.x, Windows 9x, Windows XP, Windows 2000/NT, Novell, NetWare 4.x, 5.x and 6.0, UNIX, Compaq Tru64 4.x, 5.x, HP-UX 10.10, 10.20, 10.30, 11.00, Linux with kernel 2.0 and higher (x86) and (AXP), SGI IRIX 6.x w/MIPS, Solaris 2.x, 8 (SPARC), Solaris 2.x with SunOS 5.6, 7.8(x86), UnixWare 7.1 (x86), MacOS X (Darwin). For latest OS compatibility, visit powerware.com
- Power input: 12VDC from Web/SNMP card
- Dimensions L x W x H 2.26 x 1.48 x 1.15 (inches), 57.6 x 37.6 x 29.3 mm
- Weight: 1.19 oz, 34 g
- Regulatory FCC Class B, UL, CUL, CE

For more information on Environmental Monitoring Probe, please visit:

http://www.powerware.com/UPS/Connectivity.asp

**(6604) Extended Battery Module (EBM)**
To extend battery (autonomy) runtime capabilities, external EBMs can be added to the P10 or P11.

**Features and Benefits**
- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount(1) or tower installation choices
- Add battery modules for even more backup capacity. Up to two (2) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappabl and can be replaced at any time without interrupting UPS operation and load
protection
- Identical dimensions as P10 or P11 UPS

**Note:** (1) Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per EBM. For other IBM rack types, contact Powerware.

**Characteristics**
- Attributes provided:
  - EBM with one (1) attached DC cable
  - User's Guide
  - Tower mounting hardware
- FC 6604 is valid for 9910-P10, P11 UPS.
  - Minimum required: 0
  - Maximum allowed: 2

**P10, P11 runtime table (load listed by watts)**

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6604</th>
<th>+2 6604</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>37</td>
<td>271</td>
<td>546</td>
<td>–</td>
</tr>
<tr>
<td>280</td>
<td>19</td>
<td>142</td>
<td>278</td>
<td>–</td>
</tr>
<tr>
<td>490</td>
<td>9</td>
<td>72</td>
<td>156</td>
<td>–</td>
</tr>
<tr>
<td>595</td>
<td>6</td>
<td>59</td>
<td>124</td>
<td>–</td>
</tr>
<tr>
<td>700 (maximum)</td>
<td>5</td>
<td>48</td>
<td>104</td>
<td>–</td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P10 or P11, please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

**(#6605) Extended Battery Module (EBM)**

To extend battery (autonomy) runtime capabilities, external EBMs can be added to the P15 or P16

**Features and Benefits**
- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount(1) or tower installation choices
- Add battery modules for even more backup capacity. Up to four (4) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
- Identical dimensions as P15 or P16 UPS
Note: (1) Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per EBM. For other IBM rack types, contact Powerware.

Characteristics

- Attributes provided:
  - EBM with one (1) attached DC cable
  - User's Guide
  - Tower mounting hardware
- FC 6605 is valid for 9910-P15, P16 UPS.
  - Minimum required: 0
  - Maximum allowed: 4

P15, P16 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6605</th>
<th>+2 6605</th>
<th>+3 6605</th>
<th>+4 6605</th>
</tr>
</thead>
<tbody>
<tr>
<td>280</td>
<td>46</td>
<td>177</td>
<td>331</td>
<td>501</td>
<td>682</td>
</tr>
<tr>
<td>490</td>
<td>25</td>
<td>96</td>
<td>180</td>
<td>272</td>
<td>370</td>
</tr>
<tr>
<td>595</td>
<td>21</td>
<td>76</td>
<td>142</td>
<td>214</td>
<td>292</td>
</tr>
<tr>
<td>700</td>
<td>16</td>
<td>61</td>
<td>115</td>
<td>174</td>
<td>237</td>
</tr>
<tr>
<td>875</td>
<td>11</td>
<td>46</td>
<td>87</td>
<td>131</td>
<td>179</td>
</tr>
<tr>
<td>050 (maximum)</td>
<td>8</td>
<td>37</td>
<td>70</td>
<td>106</td>
<td>144</td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P15 or P16, please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6606) Extended Battery Module (EBM)
To extend battery (autonomy) runtime capabilities, external EBMs can be added to the P60 or P61.

Features and Benefits

- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable rack space, (3U per EMB) by offering rack-mount* or tower installation choices
- Add battery modules for even more backup capacity. Up to two (2) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection

Characteristics
 Attributes provided:
  o EBM with one (1) attached DC cable
  o User's Guide
  o 4-post rail kit and rack mounting hardware

FC 6606 is valid for 9910-P60, P61 UPS.
  o Minimum required: 0
  o Maximum allowed: 2

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6606</th>
<th>+2 6606</th>
<th>+3 6606</th>
<th>+4 6606</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>62</td>
<td>144</td>
<td>236</td>
<td></td>
<td></td>
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<tr>
<td>2000</td>
<td>28</td>
<td>66</td>
<td>107</td>
<td></td>
<td></td>
</tr>
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<td>3000</td>
<td>18</td>
<td>40</td>
<td>66</td>
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<tr>
<td>4000</td>
<td>12</td>
<td>28</td>
<td>47</td>
<td></td>
<td></td>
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<tr>
<td>5000</td>
<td>8</td>
<td>21</td>
<td>36</td>
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<td></td>
</tr>
<tr>
<td>6000 (maximum)</td>
<td>6</td>
<td>18</td>
<td>28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P60 or P61, please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6607) Extended Battery Module (EBM)
To extend battery (autonomy) runtime capabilities, external EBMs can added to the P33.

Features and Benefits
  o Hot-swappable
  o Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
  o Delivers deployment flexibility while conserving valuable rack space (2U per EBM), by offering rack-mount* installation
  o Add battery modules for even more backup capacity. Up to four (4) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
  o Identical dimensions as P33 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per EBM. For other IBM rack types, contact Powerware.

Characteristics
  o Attributes provided:
    o EBM with one (1) attached DC cable
FC 6607 is valid for 9910-P33 UPS
  - Minimum required: 0
  - Maximum allowed: 4

P33 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6607</th>
<th>+2 6607</th>
<th>+3 6607</th>
<th>+4 6607</th>
</tr>
</thead>
<tbody>
<tr>
<td>1350</td>
<td>15</td>
<td>61</td>
<td>103</td>
<td>146</td>
<td>190</td>
</tr>
<tr>
<td>2700 (maximum)</td>
<td>5</td>
<td>25</td>
<td>49</td>
<td>69</td>
<td>90</td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P33 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6608) Extended Battery Module (EBM)
To extend battery (autonomy) runtime capabilities, external EBMs can added to the P18.

Features and Benefits
- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable rack space (2U per EBM), by offering rack-mount* installation
- Add battery modules for even more backup capacity. Up to four (4) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
- Identical dimensions as P18 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per EBM. For other IBM rack types, contact Powerware.

Characteristics
- Attributess provided:
  - EBM with one (1) attached DC cable
  - User's Guide
  - Tower mounting hardware
- FC 6608 is valid for 9910-P18 UPS
  - Minimum required: 0
Maximum allowed: 4

P18 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6608</th>
<th>+2 6608</th>
<th>+3 6608</th>
<th>+4 6608</th>
</tr>
</thead>
<tbody>
<tr>
<td>720</td>
<td>13</td>
<td>57</td>
<td>161</td>
<td>172</td>
<td>205</td>
</tr>
<tr>
<td>1340 (maximum)</td>
<td>5</td>
<td>23</td>
<td>49</td>
<td>73</td>
<td>96</td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P18 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6635) Extended Battery Cabinet (EBC)
To extend battery (autonomy) runtime capabilities, external EBMs can added to the P93.

Features and Benefits

- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable floor space
- Add battery modules for even more backup capacity. Up to two (2) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
- Identical (line-up-and-match) dimensions as P93 UPS
- If installation of 6635 is concurrent to P93, installation of the DC cable is hardwired by a Powerware installation contractor at installation
- If installation of 6635 is non-concurrent or a Miscellaneous Equipment Specification (MES), installation is the responsibility of the customer

Characteristics

- Attributes provided:
  - EBC with one (1) DC cable
  - User's Guide
  - Mounting hardware
- FC 6635 is valid for 9910-P93 UPS
  - Minimum required: 0
  - Maximum allowed: 2

P93 runtime table (load listed by watts)
### Load in Watts

<table>
<thead>
<tr>
<th>Standard</th>
<th>+1 6635</th>
<th>+2 6635</th>
</tr>
</thead>
<tbody>
<tr>
<td>7000</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>10500</td>
<td>26</td>
<td>65</td>
</tr>
<tr>
<td>14000 (maximum)</td>
<td>17</td>
<td>48</td>
</tr>
</tbody>
</table>

For more information on battery runtimes of P93 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

### (#6636) Extended Battery Cabinet (EBC)

To extend battery (autonomy) runtime capabilities, external EBMs can added to the P95.

#### Features and Benefits
- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable floor space
- Add battery modules for even more backup capacity. Up to three (3) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
- Identical (line-up-and-match) dimensions as P95 UPS
- If installation of 6636 is concurrent to P95, installation of the DC cable is hardwired by a Powerware installation contractor at installation
- If installation of 6636 is non-concurrent or a Miscellaneous Equipment Specification (MES), installation is the responsibility of the customer

#### Characteristics
- Attributes provided:
  - EBC with one (1) DC cable
  - User's Guide
  - Mounting hardware
- FC 6636 is valid for 9910-P95 UPS
  - Minimum required: 0
  - Maximum allowed: 3

#### P95 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6636</th>
<th>+2 6636</th>
<th>+3 6636</th>
</tr>
</thead>
<tbody>
<tr>
<td>70000</td>
<td>30</td>
<td>160</td>
<td>390</td>
<td>510</td>
</tr>
</tbody>
</table>
For more information on battery runtimes of P95 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6640) Extended Battery Module (EBM)
To extend battery (autonomy) runtime capabilities, external EBMs ca added to the P30.

Features and Benefits

- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount* or tower installation choices
- Add battery modules for even more backup capacity. Up to four (4) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced a any time without interrupting UPS operation and load protection
- Identical dimensions as P30 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per EBM. For other IBM rack types, contact Powerware.

Characteristics

- Attributes provided:
  - EBM with one (1) attached DC cable
  - User's Guide
  - Power mounting hardware
- FC 6640 is valid for 9910-P30 UPS
  - Minimum required: 0
  - Maximum allowed: 4

P30 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6640</th>
<th>+2 6640</th>
<th>+3 6640</th>
<th>+4 6640</th>
</tr>
</thead>
<tbody>
<tr>
<td>875</td>
<td>16</td>
<td>57</td>
<td>90</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>1050</td>
<td>13</td>
<td>55</td>
<td>72</td>
<td>120</td>
<td>160</td>
</tr>
<tr>
<td>1750</td>
<td>7</td>
<td>28</td>
<td>48</td>
<td>68</td>
<td>88</td>
</tr>
</tbody>
</table>
For more information on battery runtimes of P30 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#6641) Extended Battery Module (EBM)
To extend battery (autonomy) runtime capabilities, external EBMs can be added to the P64.

Features and Benefits

- Hot-swappable
- Increases battery life through Advanced Battery Management (ABM®) technology, resulting in more up-time and fewer battery replacements
- Deliver deployment flexibility while conserving valuable rack space, by offering rack-mount* or tower installation choices
- Add battery modules for even more backup capacity. Up to four (4) EBMs can be added to provide additional battery backup capacity as necessary. These battery modules are hot-swappable and can be replaced at any time without interrupting UPS operation and load protection
- Identical dimensions as P64 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6631 per EBM. For other IBM rack types, contact Powerware.

Characteristics

- Attributes provided:
  - EBM with one (1) attached DC cable
  - User's Guide
  - Tower mounting hardware
- FC 6641 is valid for 9910-P64 UPS
  - Minimum required: 0
  - Maximum allowed: 4

P64 runtime table (load listed by watts)

<table>
<thead>
<tr>
<th>Load in Watts</th>
<th>Standard</th>
<th>+1 6641</th>
<th>+2 6641</th>
<th>+3 6641</th>
<th>+4 6641</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>37</td>
<td>107</td>
<td>186</td>
<td>271</td>
<td>361</td>
</tr>
<tr>
<td>2100</td>
<td>24</td>
<td>70</td>
<td>121</td>
<td>178</td>
<td>237</td>
</tr>
<tr>
<td>2800</td>
<td>19</td>
<td>49</td>
<td>85</td>
<td>125</td>
<td>167</td>
</tr>
<tr>
<td>3500</td>
<td>13</td>
<td>37</td>
<td>65</td>
<td>96</td>
<td>128</td>
</tr>
<tr>
<td>4200 (maximum)</td>
<td>10</td>
<td>30</td>
<td>52</td>
<td>76</td>
<td>102</td>
</tr>
</tbody>
</table>
For more information on battery runtimes of P64 please visit:

http://oem.powerware.com/ibm-ups/Products/9910solutions/pw400run.asp

(#2915) Power Distribution Unit (PDU) 120V
Provides two (2) low power - less than 250VA, outlets (receptacles) to the P60.

Features and Benefits
- Installs on either side of rack (side-mount)
- Provides two (2) IEC 320-C13 (10A) convenience outlets for low voltage (120V) rack devices such as displays or monitors
- Supports up to 250VA of load

Characteristics
- Attributes provided:
  - One (1) IEC 320-C13 to IEC 320-C14 jumper cord
  - User's Guide
  - Rack mounting hardware
- FC 2915 is valid for 9910-P60 UPS
  - Minimum required: 0
  - Maximum allowed: 1

(#6570) NEMA PowerPass Distribution Module (PDM)
The Powerware FC 6570 PDM is designed to enhance the reliability and flexibility of the P30 UPS. The PDM enables you to upgrade or replace the P30 while continuously providing power to your protected equipment. The PDM supports non-redundant and dual-redundant power connections to your equipment. The PDM also provides surge protection for the critical loads if the P30 is not present and provides surge protection for your laser printer without taxing the P30.
The PDM works in conjunction with Powerware's Software Suite (to allow orderly shutdown and startup of individual load segments. This allows you to keep key pieces of equipment running, and power down non-critical equipment to save P30 battery (autonomy) power. The PDM features four frequently used pSeries receptacle types and connects directly to the utility (mains) power using the same power cord and plug type as chosen for the P30. The PDM provides power to the P30. If you are installing a P30 and 6570 and non-redundant power to the device(s) is desired, plug all the equipment into the PDM output receptacles using the original device power cords (see FC 6570 Output Connection Table for supported plug types).
If you are installing a P30 and 6570 and dual-redundant power to the device(s) is desired, plug the minimum number of power cord(s) (See FC 6570 Output Connection Table for supported plug types) required to operate the device into the PDM output receptacles using original device power cords. Then plug the remaining (redundant) power cord(s) into a non-UPS protected output receptacle (e.g. PDU or mains) or, a second P30 with a PDM using device power cords.
**Features and Benefits**
- Replace or upgrade the P30 without losing power to your equipment
- Supports non-redundant and dual-redundant power connections to your equipment
- Provide surge protection if the P30 is not present
- Provide extra surge protection when the P30 is present
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount* or tower installation choices
- Identical dimensions (line-up-and-match) as P30 UPS

Rack mount in 7014, 0551 and 9309 rack types requires one (1) FC 6630 per PDM. For other IBM rack types, contact Powerware.

**Characteristics**
- Attributes provided:
  - NEMA PDM with attached IEC-320-C20 power cord
  - One (1) IEC-320-C19 to IEC-320-C20 power cord
  - User's & Safety Guides
  - Joining brackets and tower mounting hardware
- FC 6570 is valid for 9910-P30 UPS
  - Minimum required: 0
  - Maximum allowed: 1

When the 9910-P30 is employed in a tower configuration in NEMA-type countries, the P30 will include one NEMA-type PDM FC 6570, which contains the following output (receptacle) connections.

IBM plug types supported are referenced.

**FC 6570 Output Connection Table**

<table>
<thead>
<tr>
<th>NEMA Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-15 (qty 2)</td>
<td>4</td>
</tr>
<tr>
<td>6-15/6-20 (qty 4)</td>
<td>5/29</td>
</tr>
<tr>
<td>L6-15 (qty 2)</td>
<td>10</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P30 is not contained in this table, change the plug type on the equipment to match plug types available with feature number 6570. Power electrical cable installation diagrams are at the following Web site:
- NEMA countries:

(#6571) **NEMA PowerPass Distribution Module (PDM)**
The Powerware FC 6571 PDM is designed to enhance the reliability and flexibility of the P64 UPS. The PDM enables you to upgrade or replace the P64 while continuously providing power to your equipment.
protected equipment. The PDM supports non-redundant and dual-redundant power connections to your equipment. The PDM also provides surge protection for the critical loads if the P64 is not present and provides surge protection for your laser printer without taxing the P64. The PDM features three universal pSeries receptacle types and connects directly to the utility (mains) power using the same power cord and plug type as chosen for the P64. The PDM provides power to the P64.

If you are installing a P64 and 6571 and non-redundant power to the device(s) is desired, plug all the equipment into the PDM output receptacles using the original device power cords (see FC 6571 Output Connection Table for supported plug types).

If you are installing a P64 and 6571 and dual-redundant power to the device(s) is desired, plug the minimum number of power cord(s) (See FC 6571 Output Connection Table for supported plug types) required to operate the device into the PDM output receptacles using original device power cords. Then plug the remaining (redundant) power cord(s) into a non-UPS protected output receptacle (e.g. PDU or mains) or, a second P641 with a PDM using device power cords.

**Features and Benefits**
- Replace or upgrade the P64 without losing power to your equipment
- Supports non-redundant and dual-redundant power connections to your equipment
- Provide surge protection if the P64 is not present
- Provide extra surge protection when the P64 is present
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount* or tower installation choices
- Smaller dimensions (3U) versus P64 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6631 per PDM. For other IBM rack types, contact Powerware.

**Characteristics**
- Attributes provided:
  - NEMA PDM with attached NEMA input and output power cords
  - User's & Safety Guides
  - Joining brackets and tower mounting hardware
- FC 6571 is valid for 9910-P64 UPS
  - Minimum required: 0
  - Maximum allowed: 1

When the 9910-P64 is employed in a tower configuration in NEMA-type countries, the P64 will include one (1) NEMA-type PDM FC 6571, which contains the following output (receptacle) connections. IBM plug types supported are referenced.

**FC 6571 output connection table**

<table>
<thead>
<tr>
<th>NEMA Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-15 (qty 2)</td>
<td>4</td>
</tr>
<tr>
<td>6-15/6-20 (qty 4)</td>
<td>5/29</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P64 is not contained in this table, change the plug type on the equipment to match plug types available with FC 6571. Power electrical cable installation diagrams are at the following Web site:

- NEMA countries:

**(#6572) IEC PowerPass Distribution Module (PDM)**

The Powerware FC 6572 PDM is designed to enhance the reliability and flexibility of the P64 UPS. The PDM enables you to upgrade or replace the P64 while continuously providing power to your protected equipment. The PDM supports non-redundant and dual-redundant power connections to your equipment. The PDM also provides surge protection for the critical loads if the P64 is not present and provides surge protection for your laser printer without taxing the P64.

The PDM features three universal pSeries receptacle types and connects directly to the utility (mains) power using the same power cord and plug type as chosen for the P64. The PDM provides power to the P64.

If you are installing a P64 and 6572 and non-redundant power to the device(s) is desired, plug all the equipment into the PDM output receptacles using the power cords located in the Power Cord Kit (FC 9830) Output Connection Table for supported plug types.

If you are installing a P64 and 6572 and dual-redundant power to the device(s) is desired, plug the minimum number of power cord(s) (See FC 6572 Output Connection Table for supported plug types) required to operate the device into the PDM output receptacles using power cords referenced in the FC 6572 instructions. Then plug the remaining (redundant) power cord(s) into a non-UPS protected output receptacle (e.g. PDU or mains) or, a second P64 with a PDM using device power cords.

**Features and Benefits**

- Replace or upgrade the P64 without losing power to your equipment
- Supports non-redundant and dual-redundant power connections to your equipment
- Provide surge protection if the P64 is not present
- Provide extra surge protection when the P64 is present
- Delivers deployment flexibility while conserving valuable rack space, by offering rack-mount* or tower installation choices
- Smaller dimension (3U) versus P64 UPS

Rackmount in 7014, 0551 and 9309 rack types requires one (1) FC 6631 per PDM. For other IBM rack types, contact Powerware.

**Characteristics**

- Attributes provided:
  - IEC PDM with attached input and output power cords
  - User's & Safety Guides
Joining brackets and tower mounting hardware
- Two (2) IEC-320-C19 to IEC-320-C20 power cords (14 ft/4.4 m)

- FC 6572 is valid for 9910-P64 UPS
  - Minimum required: 0
  - Maximum allowed: 1

When the 9910-P64 is employed in a tower configuration in world trade countries, the P64 will include one IEC-type PDM FC 6572, which contains output receptacle connections described in the FC 6572 Output Connection Table. IBM plug types supported are referenced.

This 9910-P64 configuration includes two sets of five output power cables consisting of: four (4) IEC-320-C13 to C14 (6 ft/1.8 m length) and 1 one IEC-320-C19 to C20 (14 ft/4.4 m length). These power cables are located in the "Power Cord Kit" cartons, IBM feature number 9830. A maximum of two feature number 9830s are supported. In addition to the two feature number 9830s, feature number 6572 contains two IEC-320-C19 to C20 (14 ft/4.4 m length) power cords and are located in the 6572 carton.

FC 6572 Output (receptacle) Connection Table

<table>
<thead>
<tr>
<th>IEC Type</th>
<th>IBM Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC-320-C13 (10A) (qty 8)</td>
<td>-</td>
</tr>
<tr>
<td>IEC-320-C19 (16A) (qty 4)</td>
<td>-</td>
</tr>
<tr>
<td>IEC309 (P+N+G) (32A) (qty 1)</td>
<td>46</td>
</tr>
</tbody>
</table>

If the plug type selected for the equipment to be protected by the 9910-P64 is not contained in this table, use the output power cables contained in feature number 9830(s). A summary of output power cords included with the 9910-P64 and FC 6572 configuration is contained in the following table:

9910-P64 with FC 6572 and two (2) FC 9830 output power cord table

<table>
<thead>
<tr>
<th>Plug Type</th>
<th>Receptacle type</th>
<th>Length</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC-320-C14</td>
<td>IEC-320-C13</td>
<td>6 ft/1.8m</td>
<td>8</td>
</tr>
<tr>
<td>IEC-320-C20</td>
<td>IEC-320-C19</td>
<td>14 ft/4.4m</td>
<td>4</td>
</tr>
</tbody>
</table>

Power electrical cable installation diagrams are located at the following Web site:

(#6630) Rail Kit for 2U Devices
FC 6630 is a 4-post rail kit for IBM rack types 7014, 0551 and 9309; and, supports the P10, P11, P15, P16, P18, P30, P33, 6604, 6605, 6607, 6608 or 6640 when installed in the rack. One (1) 6630 is required per 9910 item installed in the rack.

**Characteristics**
- **Attributes provided:**
  - One (1) Left rail assembly, IBM PN 53P1963
  - One (1) Right rail assembly, IBM PN 53P1964
  - One (1) hardware mounting kit, IBM PN 53P1965
- **FC 6630 is valid for rack-mounted 9910-P10, P11, P15, P16, P18, P30, P33, 6604, 6605, 6607, 6608 and 6640 devices**
  - Minimum required: 1
  - Maximum allowed: 1

(#6631) Rail Kit for 3U & 5U Devices
FC 6631 is a 4-post rail kit for IBM rack types 7014, 0551 and 9309; and, supports the P64 and 6641 when installed in the rack. One (1) 6631 is required per 9910 item installed in the rack.

**Characteristics**
- **Attributes provided:**
  - One (1) Left rail assembly, IBM PN 97P5672
  - One (1) Right rail assembly, IBM PN 97P5673
  - One (1) hardware mounting kit, IBM PN 53P1965
- **FC 6631 is valid for rack-mounted 9910-P64 and 6641 devices**
  - Minimum required: 1
  - Maximum allowed: 1

(97P5674) Rack-mount Bracket Kit
PN 97P5674 is a rack-mount bracket kit for the P64 and 6641. One (1) 97P5674 is required per 9910 item installed in the rack.

**Characteristics**
- **Attributes provided:**
  - Two (2) rack-mounting bracket (black)
  - Four (4) rack-mounting bracket screws (#6-32x3/8")
- **PN 97P5674 is valid for rack-mounted 9910-P64 and 6641 devices**
  - Minimum required: 0
  - Maximum allowed: 1

(97P5675) Rack-mount Bracket Kit
PN 97P5675 is a rack-mount bracket kit for the P30 and 6640. One (1) 97P5675 is required per 9910
item installed in the rack.

**Characteristics**

- Attributes provided:
  - Two (2) rack-mounting bracket (black)
  - Four (4) rack-mounting bracket screws (#6-32x3/8”)
- PN 97P5675 is valid for rack-mounted 9910-P30 and 6641 devices
  - Minimum required: 0
  - Maximum allowed: 1

(#7001) **ProActive Concurrent Service**

FC 7001 is a one (1) year extension of the base ProActive service plan. For purchases made concurrent with the P93. For MES orders, use FC 7002, non-concurrent ProActive service.

FC 7001 ProActive service plan includes:

- 7x24 corrective maintenance coverage
- 7x24 annual performance check
- Annual power protection audit
- 7x24 remote monitoring advance response service(1)
- Monthly UPS performance report(1)
- Web access to account information and site service activity.

Requires use of P93 modem and customer-provided dedicated analog (outside) phone line. Note:

One year of ProActive Warranty Service included in the purchase price of the P93.

**Characteristics**

- Attributes provided:
  - One (1) ProActive Service plan
- FC 7001 is valid for P93
  - Minimum required: 0
  - Maximum allowed: 4

(#7002) **ProActive Non-concurrent Service**

FC 7002 is a one (1) year extension of the base ProActive service plan. For purchases made non-concurrent with the P93.

**FC 7002 ProActive service plan includes**

- 7x24 corrective maintenance coverage
- 7x24 annual performance check
- Annual power protection audit
- 7x24 remote monitoring advance response service(1)
- Monthly UPS performance report(1)
- Web access to account information and site service activity.

Requires use of P93 modem and customer-provided dedicated analog (outside) phone line. Note:
One year of ProActive Warranty Service is included in the purchase price of the P93.

**Characteristics**
- Attributes provided:
  - One (1) ProActive Service plan
- FC 7002 is valid for P93
  - Minimum required: 0
  - Maximum allowed: 4

*(#7005) IBM IPR Site Survey*

IBM Installation Planning Representative (IPR) Support to review your 3-phase UPS electrical installation plans. An IPR phone call or site visit should have occurred as well as activities outlined with completion dates prior to the arrival of your UPS. If you have not been contacted by an IPR, please call IBM National Inside Sales at 1-888-426-4343 and request an IPR to contact you. IPR Services with 7005 include:

- Review of the UPS and IBM hardware configuration and what other equipment, if any, you would like to attach to the UPS.
- Power Profile or equivalent to identify items such as the type and quantity of IBM line cords and power consumption to ensure the UPS order is adequate.
- Summary report to IBM, Powerware and you.
- FC 7005 is valid for 9910-P95 UPS
  - Minimum required: 0
  - Maximum allowed: 1

*(97P2654) Options Cabinet for P93*

PN 97P2654 is a line up and match Options Cabinet containing an input filter, external maintenance bypass, 42-pole distribution panel with a housing for output connections (FC 9880 and 9881) along with branch output breakers with various configurations to support a variety of device configurations. The Options Cabinet supports dual redundant power needs of IBM devices.

**Characteristics**
- Attributes provided:
  - One (1) Options Cabinet
- PN 97P2654 is valid for 9910-P93 UPS
  - Minimum required: 1
  - Maximum allowed: 1

*(97P3605) Options Cabinet for P95*

PN 97P3605 is a line up and match options cubicle (cabinet) containing an external UPS maintenance bypass (allows complete swap-out of UPS), output circuit breakers pre-wired to terminals and an input harmonics filter.
Output circuit breakers include; two (2) 32A 3-pole, type C, three (3) 32A 1-pole, type C; and, three (3) 16A 1-pole, type C. Optional output connections (FC 9883, 9884 and 9885) along with branch output breakers with various configurations to support a variety of device configurations. The Options Cabinet supports dual redundant power needs of IBM devices.

Characteristics
- Attributes provided:
  - One (1) Options Cabinet
- PN 97P3605 is valid for 9910-P95 UPS
  - Minimum required: 1
  - Maximum allowed: 1

(97P3604) Installation for P93
PN 97P3604 describes installation services of the P93, which is included in the P93 purchase price. With the 97P3604, the following activities will be provided:

SITE EVALUATION
Powerware site evaluation is available five days a week during normal business hours (5x8) prior to installation. During the evaluation the Powerware Power Consultant will:
- Work with IBM Installation Planning Representatives to determine output connection requirements based on the customer's application and IT hardware configuration of new equipment supplied by IBM.
- Contact customer to discuss UPS installation and output configuration. If only new IBM supplied equipment will be connected to the UPS, a site visit will not be required. If other loads are to be on the UPS, then a site visit may be required. If a site visit is required, it will be scheduled with the customer.
- Provide a site visit report to IBM, if applicable.

INSTALLATION
Powerware Installation Service uses local licensed and insured contractors and installs per NEC, state and local codes according to manufacturer's guidelines. Installation carries a five year warranty and includes:
- Moving the UPS and Options Cabinet from the customer's loading dock or ground level to the installation area using customer provided freight elevator (if installation site is on a different floor).
- Uncrating, setting in place, and disposing of packing materials.
- Making electrical connections (input and output) including optional Output Connection feature (part number 97P2660, #9881) and External Battery Cabinet feature (part number 97P2663, #6635).
- Installation is performed five days a week during normal business hours (5x8).

START-UP
After installation is completed, the customer should contact Powerware Global Services at 1-800-843-9433, and provide the P93 serial numbers (Powerware and IBM) to schedule a start-up. At start-up, a Powerware technician/contractor will:
• Perform a visual and mechanical inspection.
• Conduct an electrical pre-check.
• Inspect DC connections.
• Install interface cables and optional connectivity card features.
• Perform initial UPS start-up.
• Conduct customer operational training (same day as start-up).
• Start-up is performed five days a week during normal business hours (5x8)

The customer is responsible for installing and configuring the iSeries OS/400 UPS monitoring functions, and/or Powerware Software Suite. Free technical support is available at 1-800-925-4426 option 1.
PN 97P3604 is valid for 9910-P93 UPS
• Minimum required: 1
• Maximum allowed: 1

(97P3605) Installation for P95
PN 97P3605 describes installation services of the P95, which is included in the P95 purchase price.
With the 97P3605, the following activities will be provided:

SITE EVALUATION
Powerware site evaluation is available five days a week during normal business hours (5x8) prior to installation. During the evaluation, the Powerware Power Consultant will:
• Work with IBM Installation Planning Representatives to determine output connection requirements based on the customer's application and IT hardware configuration of new equipment supplied by IBM.
• Contact customer to discuss UPS installation and output configuration. If only new IBM supplied equipment will be connected to the UPS, a site visit will not be required. If other loads are to be on the UPS, then a site visit may be required. If a site visit is required, it will be scheduled with the customer.
• Provide a site visit report to IBM, if applicable.

INSTALLATION
Powerware Installation Service uses local licensed and insured contractors and installs per local codes and manufacturer's guidelines. Installation carries a five-year warranty and includes:
• Moving the UPS and Options Cabinet from the customer's loading dock or ground level to the installation area using customer provided freight elevator (if installation site is on a different floor). If a customer's elevator is unavailable, or not sufficiently rated, Powerware may need to bring in additional specialized carriers at an additional cost to the customer.
• Uncrating, setting in place, and disposing of packing materials.
• Making electrical connections (input and output) including optional Output Connection feature (part number 97P2661). If optional Extended Battery Cabinet feature (PN 97P2656, #6636) is included, the DC cable connection will be made by the Start-Up engineer.
• Installation is performed five days a week during normal business hours (5x8), assuming customer load equipment is in the same room as the P95 UPS.

START-Up
After installation, the contractor will:

- Perform a visual and mechanical inspection.
- Conduct an electrical pre-check.
- Inspect DC connections.
- Perform initial UPS start-up.
- Conduct customer operational training (same day as start-up).
- Start-up is performed five days a week during normal business hours (5x8)

The customer is responsible for installing and configuring the iSeries OS/400 UPS monitoring functions, and/or Powerware Software Suite. Free technical support is available at +44 (0) 1753 608 700.

PN 97P3605 is valid for 9910-P95 UPS

- Minimum required: 1
- Maximum allowed: 1

**Feature Exchanges**

Not available.

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**Accessories**

None.

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**Customer Replacement Parts**

Not available.

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**Machine Elements**

Not available.

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**Supplies**

None.

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**Diskettes**

Not available.

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**Trademarks**

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