

Lucent Technologies



**Site Preparation,
Installation and Operator's Manual**

for

**Lucent Technologies
Series 1
Uninterruptible Power Systems**

Models 4500/5000/6000 VA

Select Code 167-405-115

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Issue 2**

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Special Symbols

The following common symbols may be found on the UPS:



LOAD ON – Press the button with this symbol to energize the output receptacles (Output ON).



LOAD OFF – Press the button with this symbol to de-energize the output receptacles (Output OFF).



SAFETY EARTHING TERMINAL – Indicates the primary safety ground.



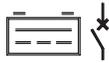
RISK OF ELECTRIC SHOCK – Indicates that a risk of electric shock is present and the associated warning should be observed.



CAUTION: REFER TO OPERATOR'S MANUAL – Refer to your operator's manual for additional information.



INPUT BREAKER – Indicates the input breaker, which shuts off utility power to the PPU.



BATTERY BREAKER – Indicates the battery breaker, which shuts off battery power (power transmission through the battery cord) when in the OFF (O) position.



BATTERY CONNECTOR – Indicates the battery connector, which remains electrically “hot” even with the battery breaker off. Keep covered when not in use.



INPUT – Indicates the input to a unit.



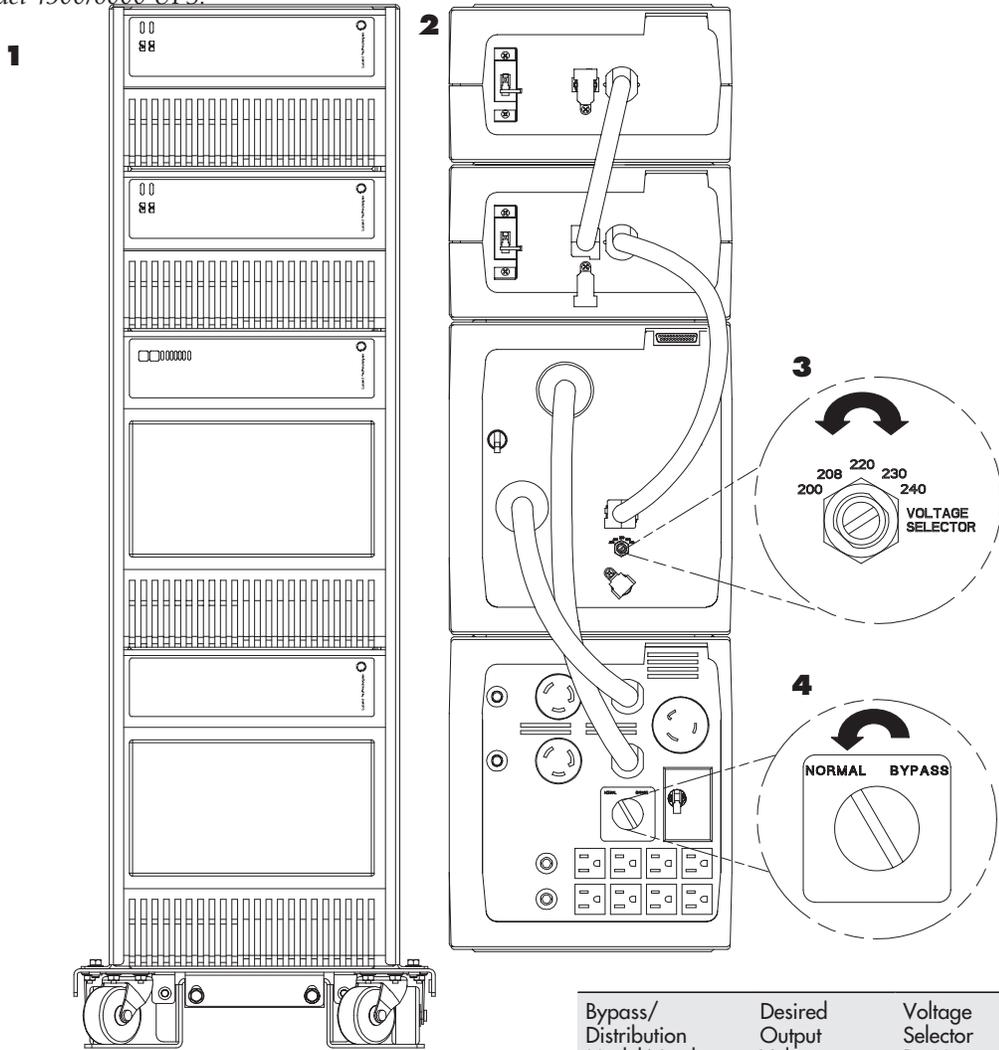
OUTPUT – Indicates the output to a unit.

QUICK START

UPS with BDM Installation

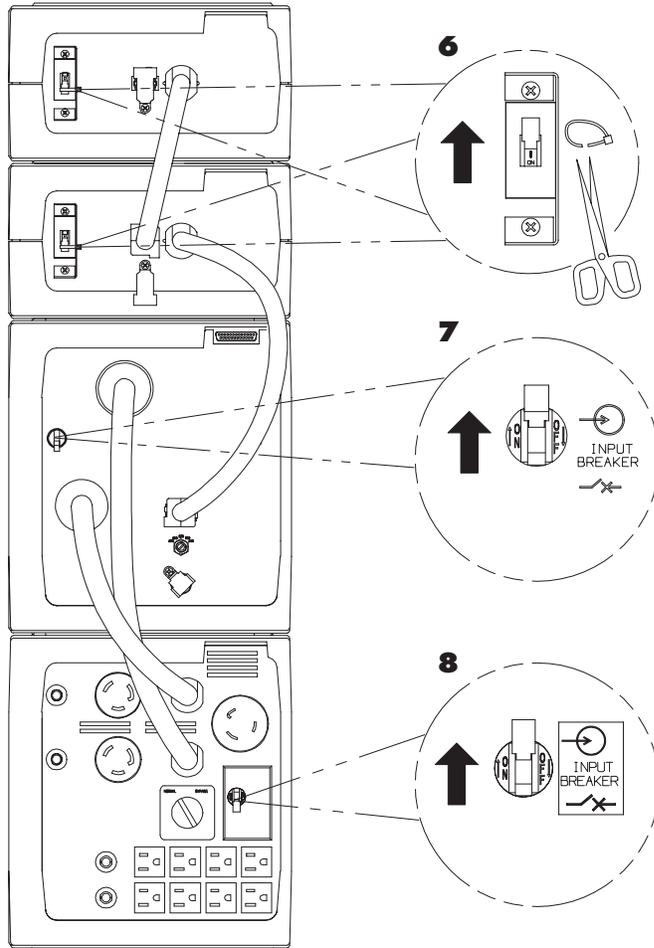
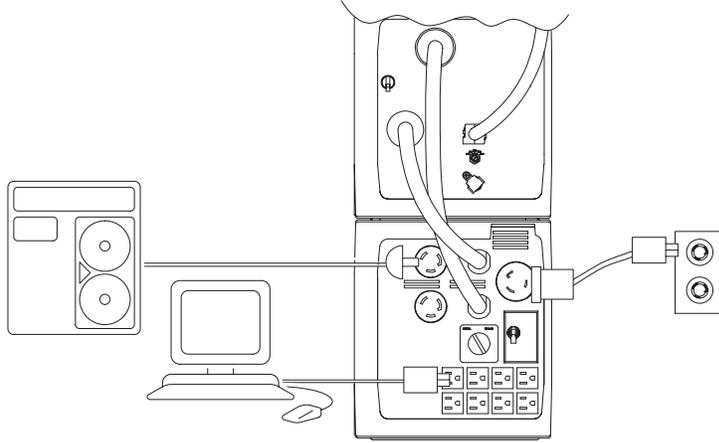


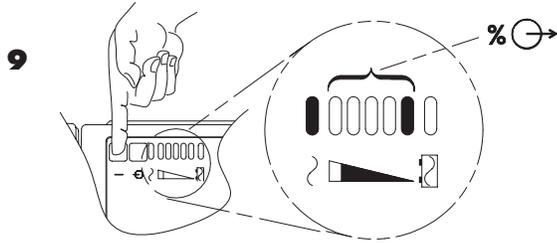
Caution: Read the safety instructions beginning on page NO TAG before installing the Model 4500/6000 UPS.



Bypass/ Distribution Model Number	Desired Output Voltage	Voltage Selector Position
208: ___	120/208V	208
	100/200V	200
240: ___	110/220V	220
	115/230V	230
	120/240V	240

5





T A B L E O F C O N T E N T S

1	Introduction	1
	UPS Model and Battery Configurations	3
	System Requirements	3
	Battery Times	4
2	Safety Requirements	5
	Sikkerhedsanvisninger	6
	Belangrijke Veiligheidsinstructies	7
	Tärkeitä turvaohjeita	8
	Consignes de Sécurité	9
	Wichtige Sicherheitsanweisungen	10
	Importanti istruzioni di sicurezza	11
	Viktig Sikkerhetsinformasjon	12
	Regulamentos de Segurança	13
	Requisitos de seguridad	15
	Viktig säkerhetsinformation	16
3	Installation	19
	Unpacking and Inspection	19
	UPS and Battery Module Storage	19
	Important Installation Notes – Read Before Installing the UPS	19
	Systems That Require Contact Closure	20
	Systems That Require a Serial Interface	20
	Installing the UPS	20
	REPO Installation	30
	UPS with BDM Startup	32
	Troubleshooting Tips	33
	EPDM Configurations	34
4	UPS Operation	35
	UPS Front Panel	35
	Operating Modes	36
	Normal Mode	36

Table of Contents

Bypass Mode	37
Battery Mode	37
Diagnostics	38
Battery Test on Demand	38
Battery Start	38
UPS Shutdown	39
Changing the Output Voltage	39
Using the BDM	40
Using Maintenance Bypass	40
5 Communication	45
Initial Communications Settings	45
Front Panel Communications Access	46
UPS Serial Communications Menu	47
UPS Communications Interface Port	51
Communications Mode Reference Chart	52
6 Specifications	53
Model 6000 Specifications	53
UPS Physical Specifications	54
UPS Technical Specifications	55
Electrical Specifications for the Model 6000 with BDM	56
7 Troubleshooting	59
Resetting the UPS	61
Silencing the Alarm	61
Service and Support	62
Parts List	62
Index	65

Congratulations on the purchase of your Lucent Technologies Series 1 uninterruptible power system (UPS). The UPS meets the toughest measures of superior design and manufacturing, including ISO 9001. You now own the most reliable power protection available.

This family of UPS systems provides a steady, well-regulated power supply for your computing and communications equipment, while protecting it from the frequent irregularities that are inherent in commercially available power. Voltage spikes, power surges, brownouts, and power failures have the potential to corrupt critical data, destroy unsaved work sessions, and in some instances, damage expensive hardware.

Now you can safely eliminate the effects of electrical line disturbances and guard the integrity of your systems and equipment. The Bypass/Distribution Module (BDM) has a Maintenance Bypass feature that supplies power to your equipment even when the power processing unit (PPU) is removed for maintenance or upgrades. Figure 1 shows the Model 6000 UPS with two battery modules, a PPU, and a BDM.

In addition, an Extended Battery Cabinet (EBC) may be configured. The installation of this product and connection to the battery modules is covered by a separate document shipped with the EBC.

1 Introduction

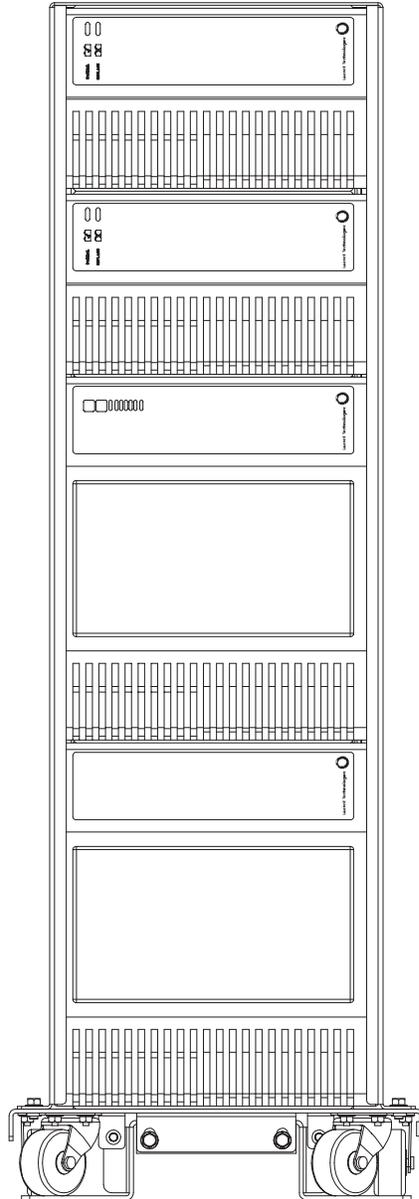


Figure 1. Model 6000 UPS

UPS Model and Battery Configurations

There are two important considerations when selecting the UPS model and battery configuration to properly safeguard your equipment:

- 1 Load requirements.** The load is the equipment to be protected by the UPS. Select the UPS model that meets the power consumption requirements of the equipment to be protected. See the following section, “System Requirements,” to determine the load requirements.
- 2 Battery extension time.** During a power failure, the UPS battery supplies power to your equipment, providing time to complete computing activities prior to UPS shutdown. The duration of this time period is directly related to the UPS battery configuration. By adding battery modules, you can customize the UPS to provide enough battery time for normal activities.



Note: Do not connect more than six standard battery modules to the PPU. For extended battery times, contact your Lucent Technologies representative.

System Requirements

Determine the total load requirements, in volt-amperes, of the equipment to be protected by the UPS. The UPS load should not exceed the UPS rating. To determine the total load requirements:

- 1** Obtain the load ratings from either the nameplate or operator’s manual of the equipment to be protected by the UPS. The ratings are listed in either watts (W), amperes or amperes max (A), or volt-amperes (VA).
- 2** If the rating is in watts, multiply by 1.4 to obtain the VA requirement (this is the typical relationship between watts and volt-ampere ratings in most processor-based equipment).

If the rating is in amperes or amperes max, multiply by the input voltage to obtain the VA requirement.

- 3** Add all of the resultant VA ratings together to obtain the total load requirements of the equipment to be protected (see Figure 2).

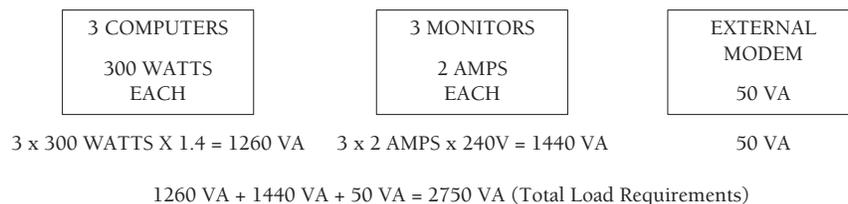


Figure 2. Volt-Amperes Calculation Example

1 Introduction

If the total load requirements of the equipment exceeds the capacity of the UPS, you must either reduce the number of pieces of equipment, or use a UPS with a larger load capacity.

When deciding on which pieces of equipment to remove from the UPS, select equipment that has a lower priority for power protection. Computers, monitors, and modems typically have a higher priority because they could be processing or transmitting data when a power outage occurs.

i **Note:** *DO NOT protect laser printers with the UPS because of the exceptionally high power requirements of the heating elements.*

i **Note:** *This UPS is designed to work with single-phase, three-wire, AC power sources.*

Battery Times

Load (VA) at 0.67 PF*	Load (W)	Approximate Battery Time (in Minutes)				
		2 Modules	3 Modules	4 Modules	5 Modules	6 Modules
1500	1000	34	54	75	98	128
3000	2000	14	26	35	46	59
4500	3000	8	14	22	27	35
6000	4000	6	11	15	21	25

*Typical Power Factor (PF)

i **Note:** *If using an EBC, refer to the EBC manual for approximate battery times.*

Important Safety Instructions – Save These Instructions This Manual Contains Important Safety Instructions



Danger: This UPS contains **LETHAL VOLTAGES**. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the UPS.

Caution: Batteries can present a risk of electrical shock or burn from high short circuit current. Observe proper precautions.

Caution: Proper disposal of batteries is required. Refer to your local codes for disposal requirements.

Caution: This UPS contains its own energy source (batteries). The output receptacles may carry live voltage even when the UPS is not connected to an AC supply.

Caution: Never dispose of batteries in a fire. Batteries may explode when exposed to flame.

Caution: Never open or mutilate batteries. Released electrolyte is harmful to the skin and eyes, and may be extremely toxic.

Caution: To reduce the risk of fire or electric shock, install this UPS in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% max).

Caution: Do not remove or unplug the input cord when the UPS is turned on. This removes the safety ground from the UPS and the equipment connected to the UPS.

Caution: The wall outlet must be within 2 meters of the equipment and accessible to the operator. The on/off switch on the UPS does not electrically isolate the internal parts. Unplug the input cord from the wall outlet when disconnecting the unit for long periods of time.

Caution: Please note that the output sockets on the UPS are electrically live whenever the UPS Output ON button (|) is pressed, even if the input cord is disconnected.

Caution: To reduce the risk of fire, connect the UPS and BDM only to circuits provided with 30 amperes maximum branch-circuit overcurrent protection.

Caution: For BDM systems with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.

2 Safety Warnings

Caution: For BDM systems with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

Sikkerhedsanvisninger



Fare: Denne UPS (ubrudt strømforsyning) indeholder LIVSFARLIG SPÆNDING. Al reparation og service bør KUN foretages af AUTORISERET SERVICEPERSONALE. Der er INGEN DELE i UPS'en, hvorpå en BRUGER BØR FORETAGE SERVICE.

Advarsel: Batterier kan give risiko til elektrisk stød eller forbrænding fra stærk kortslutningsstrøm. Observer korrekte forholdsregler.

Advarsel: Korrekt afkastning af batterier kræves. Henvend Dem til deres lokale love m.h.t. affaldsreguleringer.

Advarsel: Denne UPS indeholder en selvforsynende energikilde (batterier). Udgangskontakterne kan overføre strømførende spænding, når UPS'en ikke er forbundet med en vekselstrømforsyning.

Advarsel: Brænd aldrig batterierne. Batterierne kan eksplodere, når de udsættes for flammer.

Advarsel: Batterierne bør aldrig åbnes eller skilles ad. Udløst elektrolyt er skadeligt for hud og øjne og kan være yderst giftigt.

Advarsel: Installer UPS'en i et temperatur- og fugtighedskontrolleret miljø frit for konduktiverende materiale for, at reducere risikoen for brand og elektrisk stød. Omgivelsestemperaturen må ikke overskride 40°C. Betjen ikke udstyrer i nærheden af vand eller urimelig fugtighed (95% maksimum).

Advarsel: Fjern eller frakobl ikke indgangsledningen, mens der er tændt for UPS'en. Dette eliminerer den beskyttende jordbinding fra UPS'en og Deres tilkoblede udstyr.

Advarsel: Stikkontakten skal være højest 2 meter fra udstyret og skal være tilgængeligt til operatøren. Hovedafbryderen på UPS'en yder ikke elektrisk isolering til de interne dele. Tag tilgangsledningen ud af strømforsyningens stikkontakt, når De ønsker at frakoble gennem længere perioder.

Advarsel: Bemærk, at udgangsstikket på UPS'en er strømførende, når der trykkes på UPS'ens blå output ON (tændt) knap (|), uanset om tilgangsledningen er frakoblet.

Advarsel: For at reducere risikoen for brand, slut kun UPS'en og BDM til kredsløb, som er forsynet med 30 ampere maksimal grenledende overstrømsbeskyttelse.

Advarsel: For BDM systemer med hårdledningsudgange, skal overstrømsbeskyttelse for vekselstrømmens udgangskredsløb forsynes af andre.

Advarsel: For BDM systemer med hårdledningsudgange, skal egnede, nominelle afbryderkontakter for vekslestrømmens udgangskredsløb forsynes af andre.

Belangrijke Veiligheidsinstructies



Gevaar: Deze UPS bevat LEVENSGEVAARLIJKE ELEKTRISCHE SPANNING. Alle reparaties en onderhoud dienen UITSLUITEND DOOR ERKEND SERVICEPERSONEEL te worden uitgevoerd. Er bevinden zich GEEN ONDERDELEN in de UPS die DOOR DE GEBRUIKER kunnen worden GEREpareerd.

Opgelet: Batterijen kunnen gevaar voor elektrische schok of brandwonden veroorzaken als gevolg van hoge kortsluitstroom. Volg de desbetreffende aanwijzingen op.

Opgelet: De batterijen moeten op de juiste wijze worden opgeruimd. Raadpleeg hiervoor uw plaatselijke voorschriften.

Opgelet: Deze UPS bevat zijn eigen energiebron (batterijen). De uitvoercontactdozen kunnen onder spanning staan wanneer de UPS niet op een wisselstroom voeding is aangesloten.

Opgelet: Nooit batterijen in het vuur gooien. De batterijen kunnen ontploffen.

Opgelet: Nooit batterijen openen of verminken. Vrijkomend elektrolyt is schadelijk voor de huid en ogen, en kan uiterst giftig zijn.

Opgelet: Teneinde de kans op brand of elektrische schok te verminderen dient deze UPS in een gebouw met temperatuur- en vochtigheidsregeling te worden geïnstalleerd, waar geen geleidende verontreinigingen aanwezig zijn. De omgevingstemperatuur mag 40°C (104°F) niet overschrijden. Niet gebruiken in de buurt van water of bij zeer hoge vochtigheid (max. 95%).

Opgelet: Verwijder het invoersnoer niet of haal de stekker van het invoersnoer er niet uit terwijl de UPS aan staat. Hierdoor zou de UPS en uw aangesloten apparatuur geen aardebeveiliging meer hebben.

Opgelet: De hoofdvoedingcontactdoos moet zich op minder dan 2 meter vande apparatuur bevinden en makkelijk bereikbaar zijn voor de gebruiker. De aan/uit-schakelaar op de UPS biedt geen elektrische isolatie voor de inwendige onderdelen. De stekker uit de voedingcontactdoos halen wanneer het apparaat voor lange tijd niet wordt gebruikt.

Opgelet: Neem er nota van dat de uitvoervoedingcontactdozen op de UPS altijd onder stroom staan wanneer de belastingschakelaar (I) wordt ingedrukt, ongeacht de aanwezigheid van de voeding.

2 Safety Warnings

Opgelet: *Teneinde de kans op brand te verminderen mogen de UPS en BDM alleen op circuits worden aangesloten met een overstroombeveiliging voor een aftakingscircuit van maximaal 30 ampère.*

Opgelet: *Voor BDM systemen met vast-bedrade uitgangen, moet de overstroombeveiliging voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.*

Opgelet: *Voor BDM systemen met vast-bedrade uitgangen, moeten de juiste hoofdschakelaars voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.*

Tärkeitä turvaohjeita



Vaara: *Tämä UPS sisältää HENGENVAARALLISIA JÄNNITTEITÄ. Kaikki korjaukset ja huollot on jätettävä VAIN VALTUUTETUN HUOLTOHENKILÖSTÖN TOIMEKSI. Tämä UPS ei sisällä MITÄÄN KÄYTTÄJÄN HUOLLETTAVIA OSIA.*

Varo: *Paristot saattavat aiheuttaa sähköiskun vaaran tai syttyä tuleen mikäli akusto kytketään oikosulkuun. Noudata asianmukaisia ohjeita.*

Varo: *Paristot täytyy hävittää säädösten mukaisella tavalla. Noudata paikallisia määräyksiä.*

Varo: *Tämä UPS sisältää oman energialähteen (paristot). Ulostulorasioissa voi olla jännite, kun UPS ei ole liitettynä verkkojännitteeseen.*

Varo: *Älä koskaan heitä paristoja tuleen. Ne voivat räjähtää.*

Varo: *Älä avaa tai riko paristoja. Paljastunut elektrolyytti on vahingollinen iholle ja silmille ja voi olla erittäin myrkyllistä.*

Varo: *Vähentääksesi tulipalon ja sähköiskun vaaraa asenna tämä UPS sisätiloihin, joissa lämpötila ja kosteus on säädettävissä ja joissa ei ole virtaa johtavia epäpuhtauksia. Ympäristön lämpötila ei saa ylittää 40° C. Älä käytä lähellä vettä tai liian kosteissa oloissa (95 % maksimi).*

Varo: *Älä poista tai irrota sisääntulojohtoa, kun UPS on kytkettynä. Tämä poistaa turvamaadoituksen UPS-laitteesta ja siihen liitetystä laitteistosta.*

Varo: *Päävirtapistokkeen täytyy olla 2 m:n säteellä laitteistosta ja käyttäjän saatavilla. UPS-laitteen virtakytkin ei eristä sisäosia virran saannilta. Irrota sisääntulopistoke, jos kytket laitteen pois käytöstä pitkäköksi ajaksi.*

Varo: *Ota myös huomioon, että UPS-laitteen ulostulokoskettimissa on jännite läsnä aina kun painetaan kuormituskatkaisinta (|), riippumatta virtalähteen tilasta.*

Varo: *Palovaaran vähentämiseksi UPS tulee kytkeä ryhmasulakkeeseen, jonka maksimiarvo on 30 A.*

Varo: BDM-järjestelmissä kiintealla asennuksella: kuormana olevien laitteiden ylivirtasuojaus ja erotuskytkimet tulee toteuttaa kuormapiireissa.

Consignes de Sécurité

Consignes Importantes De Sécurité – Conserver Ces Instructions Cette Notice Contient Des Consignes Importantes De Sécurité



DANGER! Cet UPS contient des tensions mortelles. Toute opération d'entretien et de réparation doit être effectuée **UNIQUEMENT PAR UN PERSONNEL QUALIFIÉ AGRÉÉ**. L'UPS n'a **AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR**.

ATTENTION! Une batterie peut présenter un risque de choc électrique ou de brûlure par un transfert d'énergie ou un court-circuit. Prendre les précautions nécessaires.

ATTENTION! Une mise au rebut réglementaire des batteries est obligatoire. Consulter les règlements en vigueur dans votre localité concernant la mise au rebut de batteries.

ATTENTION! Cet UPS contient sa propre source d'énergie (batteries). Les prises de sortie peuvent être sous tension même lorsque l'UPS n'est pas branché sur le secteur.

ATTENTION! Ne jamais se débarrasser de batteries en les incinérant. Elles risquent d'exploser lorsqu'elles sont exposées à une flamme.

ATTENTION! Ne jamais ouvrir ou mutiler des batteries. L'électrolyte qui s'en échappe est nuisible à la peau et aux yeux et peut s'avérer extrêmement toxique.

ATTENTION! Afin de réduire les risques d'incendie et de choc électrique, installer l'UPS uniquement dans un espace intérieur à température et humidité contrôlées et sans matériel conducteur. La température ambiante ne doit pas dépasser 40°C (104°F). Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % max).

ATTENTION! Ne pas retirer le cordon d'alimentation lorsque l'UPS est sous tension. Ceci supprime la mise à la terre de sécurité de l'UPS et du matériel connecté.

ATTENTION! La prise principale secteur doit se trouver à moins de 2 mètres du matériel et être accessible à l'utilisateur. L'interrupteur de marche/arrêt de l'UPS n'isole pas électriquement les pièces internes. Débrancher le cordon d'alimentation de la prise secteur en cas de déconnexion de l'appareil pour une période prolongée.

ATTENTION! Veuillez noter que les prises de sortie de l'UPS sont sous tension lorsque l'interrupteur de charge (|) est enfoncé, même si le cordon d'alimentation est déconnectée du secteur.

2 Safety Warnings

ATTENTION! Afin de réduire les risques d'incendie, ne brancher l'UPS et le BDM qu'à des circuits dérivés équipés d'un dispositif de protection contre une surintensité de 30 ampères au maximum.

ATTENTION! Pour les systèmes BDM ayant des sorties câblées, la protection contre une surintensité pour le(s) circuit(s) de sortie de courant alternatif doit être fournie par un autre fournisseur.

ATTENTION! Pour les systèmes BDM ayant des sorties câblées, les interrupteurs de déconnexion convenables pour le(s) circuit(s) de sortie de courant alternatif doivent être fournis par un autre fournisseur.

Wichtige Sicherheitsanweisungen

Anweisungen aufheben.

Dieses Handbuch enthält wichtige Sicherheitsanweisungen.



Vorsicht, Lebensgefahr! Diese USV enthält TÖDLICHE SPANNUNGEN! Alle Reparatur- und Wartungsarbeiten sollten NUR VON AUTORISIERTEM WARTUNGSPERSONAL durchgeführt werden. In dieser USV befinden sich KEINE VOM BENUTZER ZU WARTENDEN TEILE.

Vorsicht! Batterien können aufgrund von Kurzschlußhochstrom Elektroschocks oder Verbrennungen verursachen. Entsprechende Anleitungen befolgen.

Vorsicht! Die Batterien müssen ordnungsgemäß weggeworfen werden. Entsorgungsanweisungen sind den örtlichen Vorschriften zu entnehmen.

Vorsicht! Diese USV enthält ihre eigene Stromquelle (Batterien). An den Ausgangssteckdosen kann Spannung anliegen, selbst wenn die USV nicht an eine Wechselspannungsquelle angeschlossen ist.

Vorsicht! Batterien niemals verbrennen, da sie explodieren können.

Vorsicht! Batterien nie öffnen oder gewaltsam aufbrechen. Austretender Elektrolyt ist für Haut und Augen schädlich und kann extrem giftig sein.

Vorsicht! Um die Brand- oder Elektroschockgefahr zu verringern, diese USV nur in Gebäuden mit kontrollierter Temperatur und Luftfeuchtigkeit installieren, in denen keine leitenden Schmutzstoffe vorhanden sind. Die Umgebungstemperatur darf 40°C nicht übersteigen. Die USV nicht in der Nähe von Wasser oder in extrem hoher Luftfeuchtigkeit (max. 95 %) betreiben.

Vorsicht! Das Eingangskabel nicht entfernen oder abziehen, während die USV eingeschaltet ist, weil hierdurch die Sicherheitserdung von der USV und den daran angeschlossenen Geräten entfernt wird.

Vorsicht! Die Netzsteckdose, die zur Hauptversorgung verwendet wird, darf sich nicht weiter als 2 Meter vom Gerät weg befinden und muß für den Bediener erreichbar sein. Der Ein-/Aus-Schalter der USV bietet keine elektrische Isolation der internen Teile. Wenn das Gerät längere Zeit nicht benutzt wird, sollte es von der Netzsteckdose abgezogen werden.

Vorsicht! Beachten, daß die Ausgangssteckdosen auf der USV jedesmal Strom führen, wenn der Belastungsschalter (|) gedrückt wird, ungeachtet dessen, ob die USV mit Strom versorgt wird.

Vorsicht! Um die Brandgefahr zu verringern, die USV und BDM nur an Stromkreise mit einem Zweigleitungüberstromschutz von maximal 30 Ampere anschließen.

Vorsicht! Für BDM-Systeme mit festverdrahteten Eingängen muß der Überstromschutz für die Ausgangswchselstromkreise anderweitig bereitgestellt werden.

Vorsicht! Für BDM-Systeme mit festverdrahteten Ausgängen müssen Trennschalter für die Ausgangswchselstromkreise mit passendem Nennwert anderweitig bereitgestellt werden.

Importanti istruzioni di sicurezza



Pericolo: la TENSIONE contenuta in questo gruppo statico di continuità è LETALE. Tutte le operazioni di riparazione e di manutenzione devono essere effettuate ESCLUSIVAMENTE DA PERSONALE TECNICO AUTORIZZATO. All'interno del gruppo statico di continuità NON vi sono PARTI RIPARABILI DALL'UTENTE.

Attenzione: le batterie possono presentare rischio di scossa elettrica o di ustioni provocate da alta corrente dovuta a corto circuito. Osservare le apposite istruzioni.

Attenzione: le batterie devono essere smaltite in modo corretto. Per i requisiti di smaltimento fare riferimento alle disposizioni locali.

Attenzione: questo gruppo statico di continuità contiene una fonte di energia autonoma (le batterie). Le prese di uscita possono condurre tensione energizzata quando il gruppo statico di continuità non è collegato con una fonte di alimentazione a corrente alternata.

Attenzione: non gettare mai le batterie nel fuoco poichè potrebbero esplodere se esposte alle fiamme.

Attenzione: mai aprire nè mutilare le batterie poichè l'elettrolita da esse rilasciato è nocivo alla cute e agli occhi e può essere altamente tossico.

Attenzione: per ridurre il rischio di incendio o di scossa elettrica, installare il gruppo statico di continuità in un ambiente interno a temperatura ed umidità controllata, privo di agenti contaminanti conduttivi. La temperatura ambiente non deve superare i 40°C.

2 Safety Warnings

Non utilizzare l'unità in prossimità di acqua o in presenza di umidità eccessiva (95% max).

Attenzione: non rimuovere nè scollegare il cavo di ingresso quando il gruppo statico di continuità è acceso poichè in tal modo si disattiverrebbe il collegamento a terra di sicurezza del gruppo statico di continuità e dell'apparecchiatura ad esso collegata.

Attenzione: la presa di alimentazione principale non deve trovarsi a oltre 2 metri dall'apparecchiatura e deve essere accessibile all'operatore. L'interruttore on/off del gruppo statico di continuità non isola elettricamente i componenti interni. Scollegare l'unità dalla presa di alimentazione quando rimane in riposo per lunghi periodi di tempo.

Attenzione: si noti che le prese di alimentazione di uscita del gruppo statico di continuità sono elettricamente energizzate ogniqualvolta viene premuto l'interruttore azzurro di attivazione uscita (|), a prescindere dal fatto che il gruppo statico di continuità sia alimentato o meno.

Attenzione: per ridurre il rischio di incendio, collegare il gruppo statico di continuità e il sistema BDM esclusivamente con circuiti provvisti di protezione da sovracorrente massima di 30 ampere per circuito derivato.

Attenzione: nei sistemi BDM provvisti di uscite cablate, i dispositivi di protezione da sovracorrente per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.

Attenzione: nei sistemi BDM provvisti di uscite cablate, i sezionatori di corrente nominale adeguata per il/i circuito/i a corrente alternata in uscita devono essere forniti da terzi.

Viktig Sikkerhetsinformasjon



FArlig: Denne UPS'en inneholder LIVSFARLIGE SPENNINGER. All reparasjon og service må kun utføres av AUTORISERT SERVICEPERSONALE. BRUKERE KAN IKKE UTFØRE SERVICE PÅ NOEN AV DELENE i UPS'en.

Forsiktig: Batterier kan forårsake elektriske støt eller forbrenning på grunn av høy kortslutningsstrøm. Følg instruksene.

Forsiktig: Batterier må fjernes på korrekt måte. Se lokale forskrifter vedrørende krav om fjerning av batterier.

Forsiktig: Denne UPS'en har en egen energikilde (batterier). Stikkontaktene kan være strømførende selv om UPS'en ikke er tilsluttet en vekselstrømforsyning.

Forsiktig: Kast aldri batterier i flammer, da de kan eksplodere, hvis de utsettes for åpen ild.

Forsiktig: Batterier må aldri åpnes eller ødelegges. Frigjorte elektrolytter er skadelige for hud og øyne og kan være ekstremt giftige.

Forsiktig: For å redusere fare for brann eller elektriske støt, bør denne UPS'en installeres i et innendørs miljø med kontrollert temperatur og luftfuktighet som er fritt for ledende, forurensende stoffer. Romtemperaturen må ikke overskride 40°C (104°F). Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).

Forsiktig: Strømforsyningskabelen må ikke fjernes eller trekkes ut når UPS'en er på, slik at ikke sikkerhetsjordingen fjernes fra UPS'en og det utstyret som er forbundet med den.

Forsiktig: Stikkontakten må befinne seg innen 2 m fra utstyret og må være tilgjengelig for operatøren. Av/På-bryteren på UPS'en isolerer ikke de interne delene. Trekk ut ledningen fra stikkontakten når utstyret frakoples over lengre tidsrom.

Forsiktig: UPS'ens stikkontakter for utgangsstrømforsyning er strømførende når lastbryteren (I) trykkes, uavhengig av strømforsyningen.

Forsiktig: For å redusere fare for brann, må UPS'en og BDM bare tilsluttes strømkretser med uttak som har overstrømvern på maksimalt 30 ampere.

Forsiktig: For BDM systemer med fastkoplede uttak, må overstrømvern for vekselstrømmuttak(ene) stilles til rådighet av andre.

Forsiktig: For BDM systemer med fastkoplede uttak, må passende utkoplingsbrytere for vekselstrømmuttak(ene) stilles til rådighet av andre.

Regulamentos de Segurança

Instruções De Segurança Importantes – Guarde Estas Instruções Este Manual Contém Instruções De Segurança Importantes



Perigo: O UPS contém VOLTAGEM MORTAL. Todos os reparos e assistência técnica devem ser executados SOMENTE POR PESSOAL DA ASSISTÊNCIA TÉCNICA AUTORIZADO. Não há nenhuma PEÇA QUE POSSA SER REPARADA PELO USUÁRIO dentro do UPS.

Cuidado: As baterias podem apresentar o risco de choque elétrico, ou queimaduras provenientes de alta corrente de curto-circuito. Observe as instruções adequadas.

Cuidado: Siga os devidos regulamentos ao desfazer-se das baterias. Consulte os códigos do local para maiores informações sobre os regulamentos de descarte de produtos.

2 Safety Warnings

Cuidado: Este UPS contém sua própria fonte de energia (baterias). Os receptáculos de saída podem conter voltagem ativa quando o UPS não se encontra conectado a uma fonte de alimentação de corrente alternada.

Cuidado: Nunca se desfaça das baterias jogando-as no fogo. Há risco de explosão quando expostas à chamas.

Cuidado: Nunca abra ou danifique as baterias. O eletrólito liberado é prejudicial à pele e aos olhos e pode ser extremamente tóxico.

Cuidado: Para reduzir o risco de incêndios ou choques elétricos, instale o UPS em ambiente interno com temperatura e umidade controladas e livres de contaminadores condutíveis. A temperatura ambiente não deve exceder 40°C (104°F). Não opere-o próximo a água ou em umidade excessiva (máx: 95%).

Cuidado: Não remova ou desconecte o cabo de entrada quando o UPS estiver ligado. Isto removerá o aterramento de segurança do UPS e do equipamento conectado.

Cuidado: O soquete de alimentação principal deve estar à no máximo dois metros do equipamento e acessível ao operador. O interruptor on/off do UPS não isola eletricamente as peças internas. Desconecte-o do soquete de alimentação se não for usá-lo por um longo período de tempo.

Cuidado: Favor observar que o soquete de alimentação de saída no UPS estará eletricamente ativo todas as vezes que o interruptor (I) estiver pressionado, indiferente à presença de energia elétrica na rede de alimentação.

Cuidado: Para reduzir o risco de incêndios, conecte o UPS e o BDM somente a um circuito com proteção de sobrecarga de derivação de no máximo 30 ampères.

Cuidado: Para sistemas BDM com saídas conectadas, a proteção de sobrecarga para circuitos de saída de corrente alternada deve ser fornecida por outros.

Cuidado: Para sistemas BDM com saídas conectadas, interruptores de desconexão devidamente qualificados para circuitos de saída de corrente alternada devem ser fornecidos por outros.

Requisitos de seguridad

Instrucciones importantes de seguridad – Guarde estas instrucciones Este manual contiene importantes instrucciones de seguridad



Peligro: Este UPS (suministro de alimentación permanente) contiene VOLTAJES LETALES. Todas las reparaciones y el servicio técnico deberán ser realizados por PERSONAL DE SERVICIO TECNICO AUTORIZADO SOLAMENTE. Este UPS NO CONTIENE PARTES QUE PUEDAN SER REPARADAS POR EL USUARIO.

Precaución: Las baterías pueden presentar un riesgo de descargas eléctricas o de quemaduras debido a la alta corriente de cortocircuito. Preste atención a las instrucciones correspondientes.

Precaución: Es necesario deshacerse de las baterías adecuadamente. Consulte las disposiciones locales para conocer cuáles son los requisitos pertinentes.

Precaución: Este UPS contiene su propia fuente de energía (baterías). Es posible que los receptáculos de salida tengan tensión cuando el UPS no está conectado a un suministro de corriente alterna (CA).

Precaución: Nunca arroje las baterías al fuego ya que pueden explotar cuando son expuestas a las llamas.

Precaución: Nunca abra o mutile las baterías. El electrolito liberado es peligroso para la piel y los ojos, y puede ser extremadamente tóxico.

Precaución: Para disminuir el riesgo de incendio o descargas eléctricas, instale este UPS en un ambiente interior a temperatura y humedad controladas, y sin contaminantes conductores. La temperatura ambiente no debe superar los 40°C (104°F). No lo haga funcionar cerca del agua o de condiciones de humedad excesivas (95% como máximo).

Precaución: No retire ni desenchufe el cable de entrada mientras el UPS está encendido. Esta acción quita la descarga a tierra de seguridad del UPS y de su equipo conectado a él.

Precaución: El tomacorriente de pared debe encontrarse dentro de los 2 metros de distancia del equipo y ser accesible para el operador. El interruptor de encendido/apagado en el UPS no aísla eléctricamente las piezas internas. Desenchufe el equipo del receptáculo principal cuando se encuentre desconectado por períodos prolongados.

Precaución: Tenga en cuenta que los receptáculos salida en el UPS tendrán corriente cada vez que se haya pulsado la tecla agul de encendido de salida del UPS (|), a pesar de que el cable de entrada esté desconectado.

2 Safety Warnings

Precaución: Para disminuir el riesgo de incendio, conecte el UPS y el BDM solamente a circuitos equipados con una protección contra exceso de corriente del circuito de derivación de 30 amperes como máximo.

Precaución: Para los sistemas BDM con salidas cableadas permanentemente, la protección contra exceso de corriente para el/los circuito(s) de CA de salida será suministrada por terceros.

Precaución: Para los sistemas BDM con salidas cableadas permanentemente, los interruptores de desconexión debidamente clasificados para el/los circuito(s) de CA de salida serán suministrados por terceros.

Viktig säkerhetsinformation



Fara: Denna UPS-enhet innehåller LIVSFARLIG SPÄNNING. ENDAST AUKTORISERAD SERVICEPERSONAL får utföra reparationer eller service. Det finns inga delar som ANVÄNDAREN KAN UTFÖRA SERVICE PÅ inuti UPS-enheten.

Varning: Batterierna kan ge elektriska stötar eller brännskador från hög kortslutningsström. Följ tillämpliga anvisningar.

Varning: Batterierna måste kasseras enligt anvisningarna i lokal lagstiftning.

Varning: Denna UPS-enhet har en egen energikälla (batterier). De utgående kontaktorna kan vara spänningsförande när UPS-enheten inte är ansluten till en växelströmsenhet.

Varning: Använda batterier får aldrig brännas upp. De kan explodera.

Varning: Öppna aldrig batterierna eller ta isär dem. Utsläppt elektrolyt är skadlig för hud och ögon och kan vara mycket giftig.

Varning: Minska risken för elektriska stötar genom att installera denna UPS-enhet inomhus, där temperatur och luftfuktighet är kontrollerade och där inga ledande föroreningar förekommer. Omgivande temperatur får ej överstiga 40° Celcius. Använd inte utrustningen nära vatten eller vid hög luftfuktighet (max 95%).

Varning: Ta aldrig bort ingångskabeln när UPS-enheten är påslagen. Detta tar bort säkerhetsjordningen både från UPS-enheten och från den anslutna utrustningen.

Varning: Huvudkontakten måste vara högst 2 meter från utrustningen och inom räckhåll för användaren. UPS-enhetens strömbrytare isolerar inte elektriskt de interna delarna. Vid längre avstängning bör UPS-enheten fränkopplas.

Varning: Observera att UPS-enhetens utkontakter är strömförande när den blå laddningsströmbrytaren (|) tryckts ned, oberoende av om spänningskällan är tillkopplad eller inte.

Varning: Minska brandrisken genom att endast ansluta UPS-enheten och BDM till kretsar som förses med överströmsskydd i form av en avgreningskoppling på max 30 ampere.

Varning: Överströmsskydd för de utgående växelströmskretsarna ska tillhandahållas av andra för BDM-system med fasta utgångar.

Varning: Bortkopplingsswitchar med passande dimensionering för de utgående växelströmskretsarna ska tillhandahållas av andra för BDM-system med fasta utgångar.

The following section describes the UPS package and its contents, UPS storage requirements, and the installation and startup of the UPS. In addition, an Extended Battery Cabinet may be configured. The installation of this product and connection to the battery modules is covered by the EBC installation manual.

Unpacking and Inspection

Carefully unpack the UPS and battery modules, making sure to retain the packaging materials. Examine each unit carefully for any signs of damage and immediately notify your service representative if damage is present.

UPS and Battery Module Storage

If you plan to store the UPS or battery modules prior to use, store them in a cool, dry environment. Storage temperature should not exceed 35°C (95°F) in order to preserve battery life. For longer term storage, energize the power processing unit and battery module for approximately 8 hours every 90 days in order to maintain battery charge.

Whenever the units are not energized, make sure the battery circuit breaker on all battery modules is returned to the OFF (O) position (see Figure 4 on page 24).

Important Installation Notes – Read Before Installing the UPS

UPS applications requiring a serial interface or standard LAN interface may connect directly to the 25-pin UPS alarm interface. PBX systems such as the DEFINITY® Communications System and processor-based applications such as Call Center, Conversant, or Voice Processing that use a Remote Management Board require an isolated contact-closure interface that is provided by a special UPS Alarm Interface Adapter (PEC 24433).



Caution: For alarm connection to all systems that require a contact closure versus a serial interface, except 3B2, do not connect the alarms without first installing the alarm interface adapter. 3B2 systems require a different adapter shown on the following page. Failure to install the alarm adapter will have an adverse effect on computer system operation.

Set the UPS for the required communication configuration according to Chapter 5, “Communication” on page 45 before connecting the load. Failure to do this will require that the load be disconnected prior to setting the communication interface for proper alarm reporting configuration.

Systems That Require Contact Closure

- 1 This system has been set for the default alarm configuration. For installations that require contact closures, rather than a serial interface, set the system for the AS/400 configuration as described in the manual shipped with this product.

The AS/400 configuration provides alarms, which are normally open when the alarm is not present and closed when an alarm occurs.

- 2 Connect the alarm adapter to the unit's RS-232 port and the modular output to the computer, wallfield, etc. through an 8-pin modular plug.

	Comcode	PEC
For 3B2 systems, use:	406707737	24024
For all other systems, use:	407274133	24433

Systems That Require a Serial Interface

- 1 Refer to the manual shipped with the product to configure the system for the appropriate serial interface.
- 2 The alarm information is provided by the unit's RS-232 connector via the serial output pins and does not require an adapter/interface.

Installing the UPS

The Bypass Distribution Module has a Maintenance Bypass feature that supplies power to your equipment even when the PPU is removed for service. The BDM also provides 120V output.



Note: Do not connect more than six standard battery modules to the PPU. For extended battery times, contact your Lucent Technologies representative. Do not place more than six modules in one stack (the PPU is equal to two modules and the BDM is equal to two modules). Make sure you stack the modules in the order shown in Figure 3.

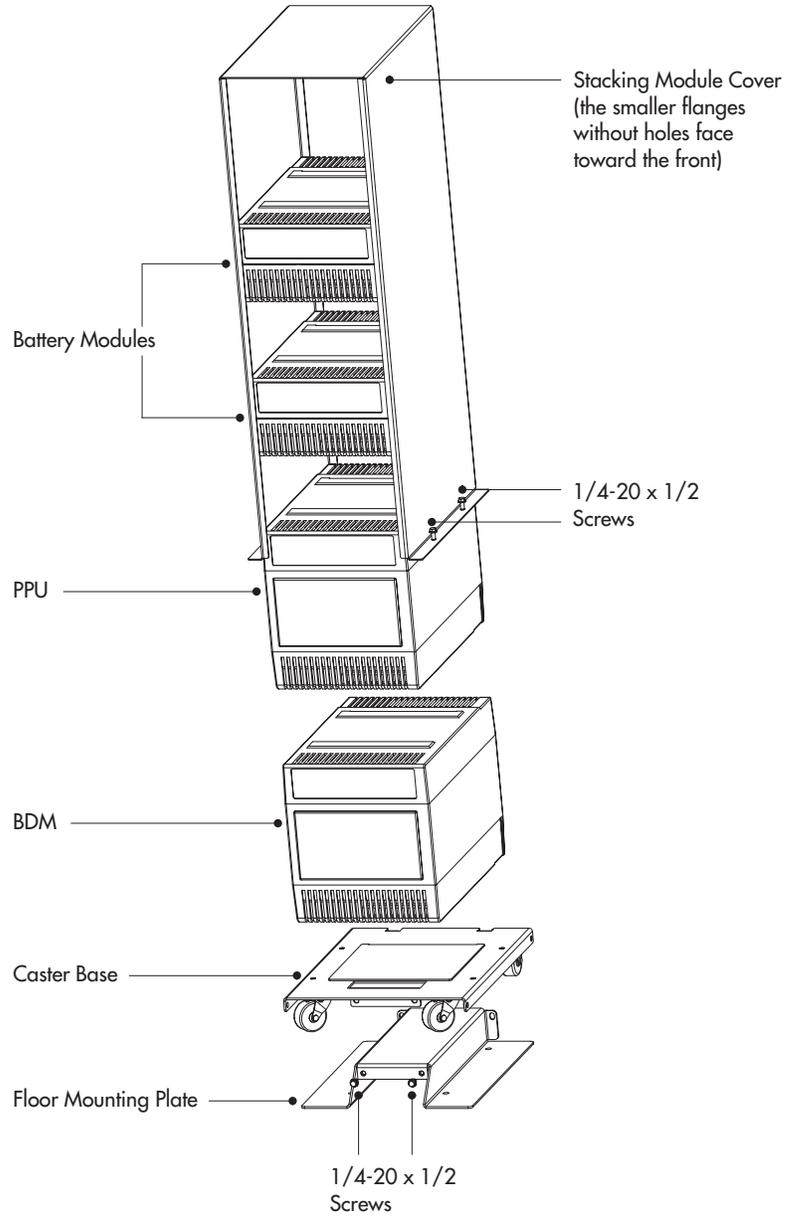


Figure 3. UPS with BDM

3 Installation

Use the following procedure to install the UPS:

- 1 Place the UPS near the equipment to be protected. Make sure the air vents and exhausts are free of obstructions and the UPS is not near a heat source or in direct sunlight.

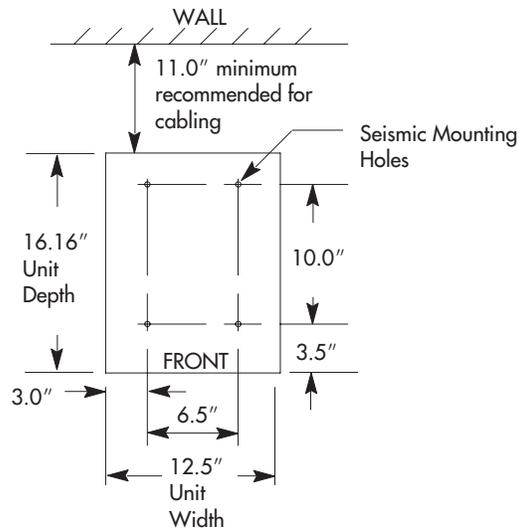


Note: You can install additional battery modules while the UPS is operating, but make sure the UPS is not in Battery Mode (see page 37).

- 2 If you are using the floor mounting plate, complete Steps A and B. This plate is required only for seismic applications, but can also be used to prevent rolling or tipping of the assembled rack.

A For Seismic Installation

Prepare the floor by referring to the hole pattern shown below. The mounting plate has four 0.375 diameter floor mounting holes for earthquake bolts (not provided). Secure the plate to the floor.



For Stability

The plate does not need to be mounted to the floor, but must be secured to the caster base to prevent the stack from rolling.

- B Secure the caster base to the mounting plate using four of the 1/4-20 x 1/2 screws provided. See Figure 3 for part locations.

- 3** Stack the modules onto the caster base according to the stacking order shown in Figure 3.

Make sure the first module nests on the base and each additional module nests on the preceding one.

If multiple Stacking Modules are used, the caster bases may be secured together on the side with two of the 1/4-20 x 1/2 screws provided.
- 4** Slide the cover over the stacked modules and secure with four of the 1/4-20 x 1/2 screws provided. Tighten the screws until the cover's flanges are pulled flat against the caster base.
- 5** If more than two batteries are to be used, place the batteries in another Stacking Module. Separate battery stacks must go to the left of the Stacking Module with PPU.



Note: *At least two battery modules must be connected to the PPU before a battery extension cord may be used.*

- 6** If you are using an optional Extended Power Distribution Module (EPDM), plug the module into the L14-30R or the L5-30R receptacle on the BDM (see page 34 for EPDM configurations).
- 7** Make sure the Bypass switch on the BDM rear panel is in the NORMAL position (see Figure 5).
- 8** Make sure the battery circuit breaker on all battery modules is in the OFF (O) position (see Figure 4).

3 Installation

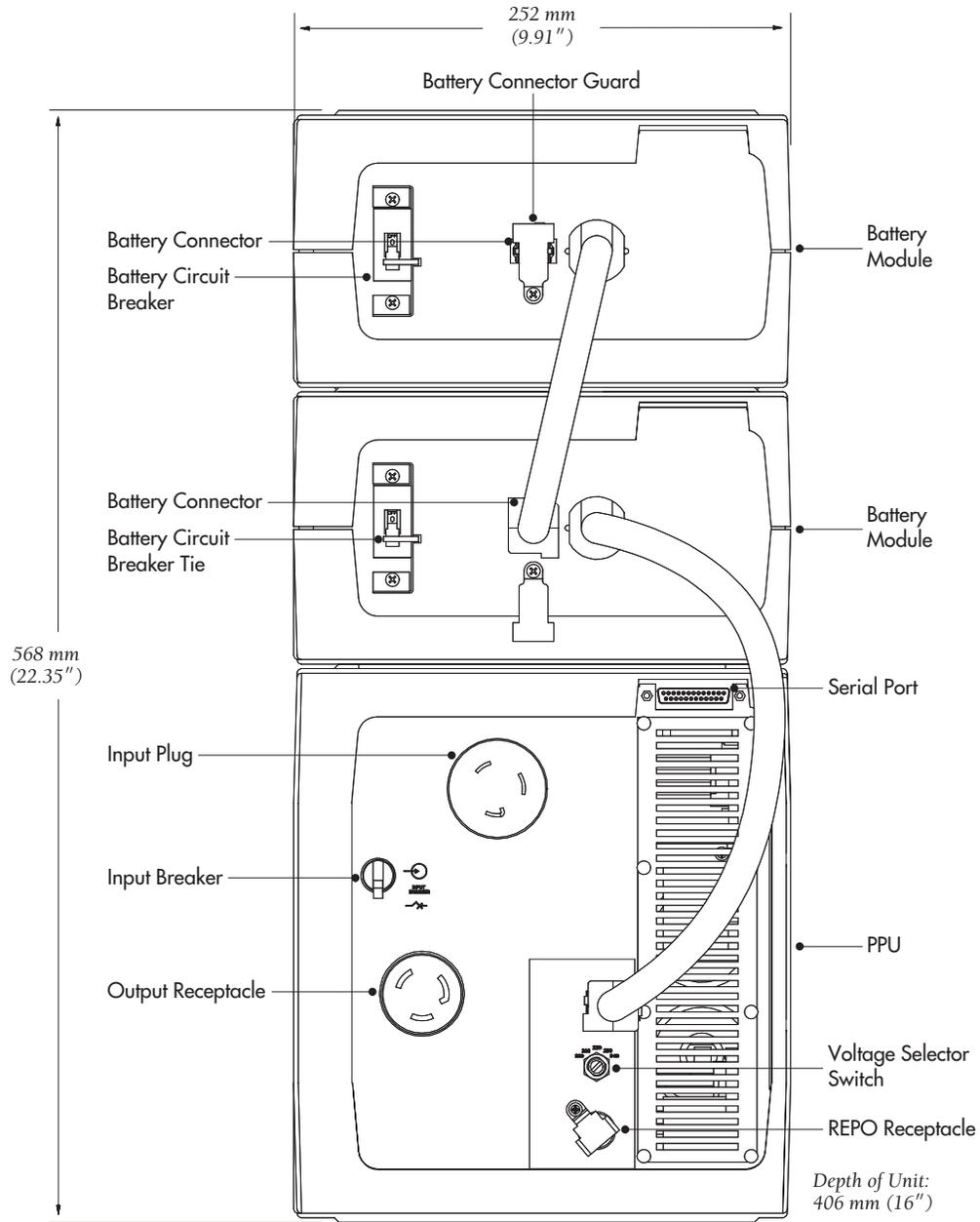


Figure 4. UPS with Battery Modules (Rear View)



Note: All battery cords are the same length. See Figure 5 on page 25 and Figure 18 on page 41 for BDM rear panels.

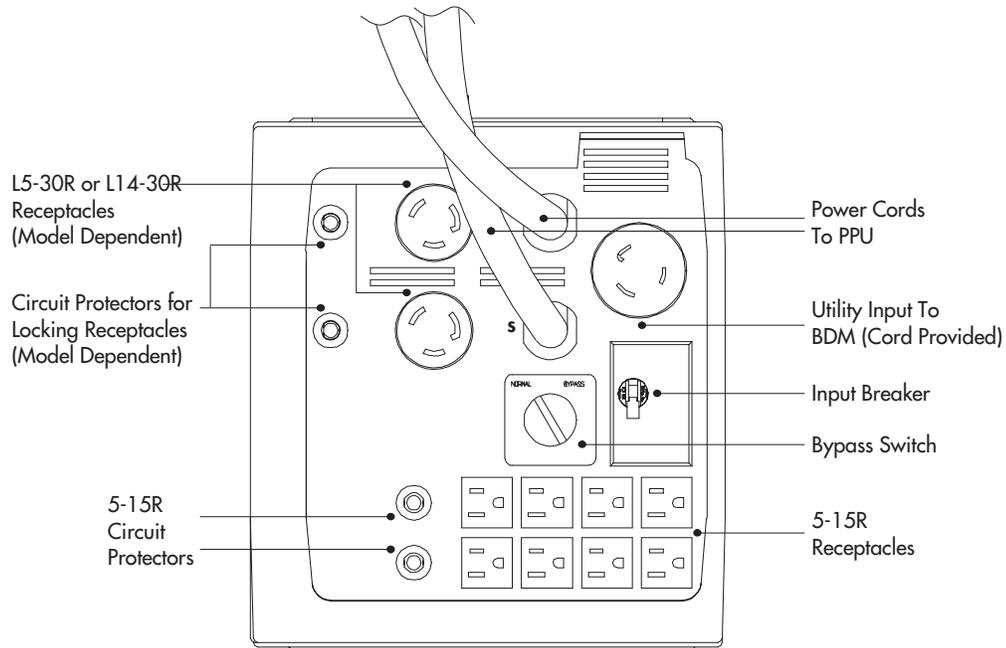


Figure 5. BDM Plug/Receptacle Unit Rear Panel Connections

- 9 Select the correct UPS output voltage according to the BDM model:

BDM Model Number	UPS Voltage Selector Switch Position*
208: 120/208 Hardwired	Set to 208V for 120/208V BDM output Set to 220V for 127/220V BDM output (60-Hz units only)
208: 120 L5-30R	208
208: 120/240 L14-30R	208
240: 120/240 Hardwired	240
240: 120/240 L5-30R	240
240: 120/240 L14-30R	240
240: 120/240E Hardwired	Set to 200V for 100/200V BDM output Set to 220V for 110/220V BDM output Set to 230V for 115/230V BDM output Set to 240V for 120/240V BDM output

*The UPS output voltage must match input voltage.

Using a screwdriver, turn the switch to the corresponding position of the output voltage required (see Figure 6). The output voltage is factory-set to 220V.



Caution: Do not turn the Voltage Selector switch while the UPS is operating (see “Changing the Output Voltage” on page 39). Changing the output voltage while the UPS is operating may cause an emergency power-off.

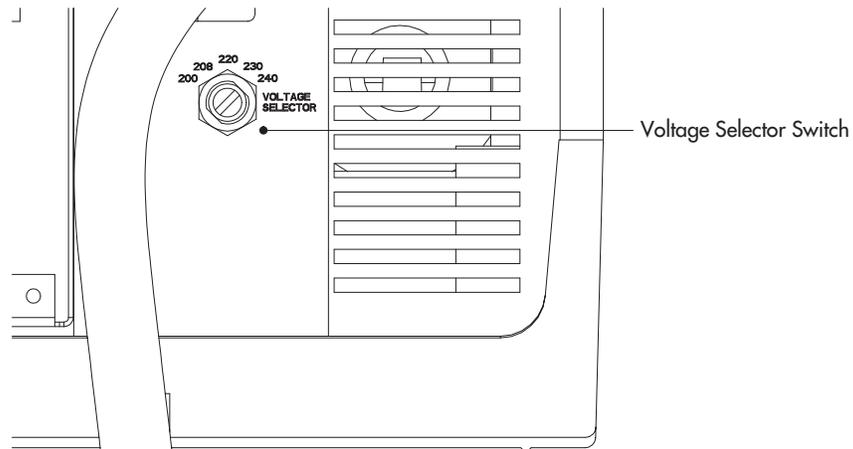


Figure 6. Voltage Selector Switch

- 10** If your BDM is a plug/receptacle unit, complete Steps 11 and 12. If you need to hardwire the BDM, skip to Step 14.
- 11** Plug the input and output power cords of the BDM into the input and output power connectors located on the PPU rear panel (see Figure 4 and Figure 5). Figure 18 on page 41 shows the BDM and PPU rear panel connections.
- 12** Make sure the equipment to be protected by the UPS is powered off. Then plug the equipment into the power output receptacles on the BDM rear panel. Skip to Step 19 on page 30 to connect the battery module(s).
- 13** Connect additional equipment to the EPDM, if one is installed.
- 14** Remove the screws on the BDM rear panel with a Phillips screwdriver and remove the BDM back panel cover.



Warning: Only qualified service personnel (such as a licensed electrician) should perform the hardwired installation.

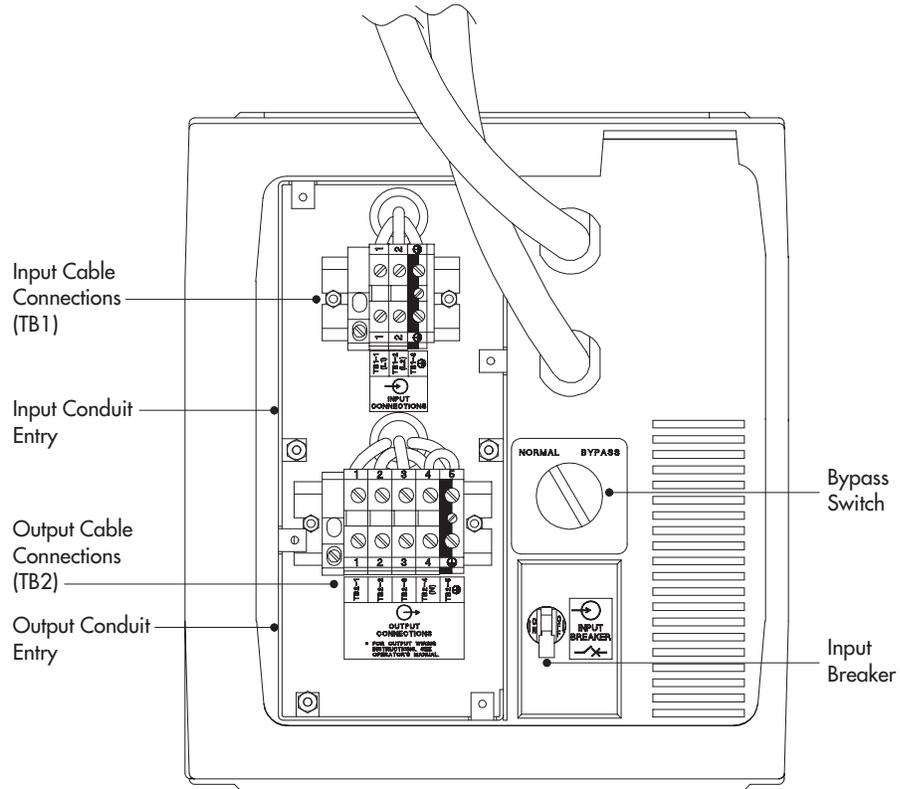


Figure 7. Hardwired BDM with rear panel cover removed

- 15** Hardwire the input (TB1) and output terminations (TB2) for the BDM. See the following hardwired terminations table for specifications. See Figure 8 on page 29 for a detailed view of the terminal blocks.

3 Installation

BDM Hardwired Terminations					
	Wire Function	Terminal Position	Terminal Wire Size Rating	Suggested Wire Size*	Conduit Connection (Entry Size)
Input	L1	TB1-1	8-18 AWG (10-0 mm ²)	10 AWG (6 mm ²)	1 1/8" (28.58 mm) access hole for 3/4" (19.05 mm) conduit
	L2/Neutral	TB1-2			
	Ground	TB1-3	10-18 AWG (6-0 mm ²)		
Output	Model and Voltage Dependent (see the following Output Wiring Table)	TB2-3	6-18 AWG (16-0 mm ²)	8 AWG (10 mm ²)	1 3/8" (34.93 mm) access hole for 1" (25.4 mm) conduit
		TB2-2			
		TB2-1			
	Neutral	TB2-4			
	Ground	TB2-5			

*Use 75°C copper wire. Suggested wire size is based on Model 240: 120/240 hardwire full load ratings applied to NEC Code Table 310-16.

BDM Hardwired Models Output Wiring					
Model 208:120/208		Model 240:120/240		Model 240:120/240E	
Output Voltage	Terminal Position	Output Voltage	Terminal Position	Output Voltage	Terminal Position
120V (50/60 Hz)	TB2-2 and TB2-4	100V, 110V, 115V, or 120V	TB2-2 and TB2-4	100V, 110V, 115V, or 120V	TB2-3 and TB2-4
127V (60 Hz only)	and/or TB2-3 and TB2-4		and/or TB2-3 and TB2-4		
208V (50/60 Hz)	TB2-1 and TB2-3	200V, 220V, 230V, or 240V	TB2-2 and TB2-3	200V, 220V, 230V, or 240V	TB2-1 and TB2-4
220V (60 Hz only)					

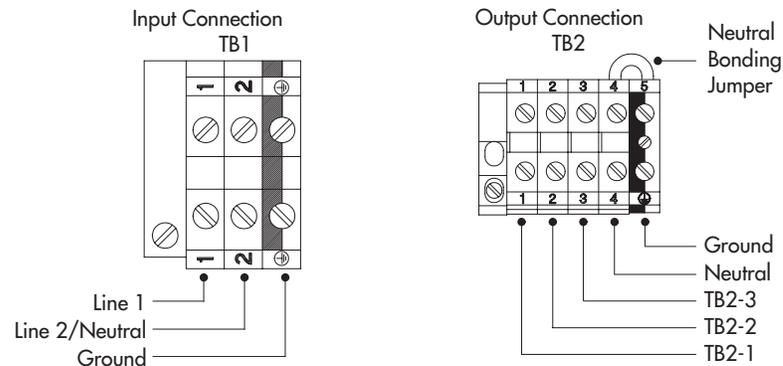


Figure 8. Hardwired BDM Terminal Blocks

i **Note:** Model 240: 120/240E only. The neutral bonding jumper on TB2 of the BDM grounds an output phase and may need to be removed. Refer to your local electrical code requirements.

- 16** Determine your equipment's grounding requirements according to your local electrical code.



Caution: For BDM systems with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by either the protected equipment or the customer's distribution panel.



Caution: For BDM systems with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by either the protected equipment or the customer's distribution panel.

- 17** As part of the branch circuit that supplies this unit, install an insulated grounding conductor. Use the following specifications for the grounding conductor that connects to input ground terminal TB1-3.

- **Material and insulation thickness:** must be identical to the grounded and ungrounded branch-circuit supply conductors
- **Color:** consult local code requirements for ground wire color code (usually green with or without a yellow stripe)
- **Ground:** should be grounded to the earth ground in the service equipment or in the supply transformer (if supplied by a separately-derived system)



Note: All attachment plug-receptacles on, or connected to, the UPS or system equipment must be a grounding type. The grounding conductors serving these receptacles must be connected to the earth ground in the service equipment.

- 18** Replace the BDM rear panel cover.

- 19** Plug the battery cord into the battery connector on the PPU rear panel. All battery connectors are polarized to prevent incorrect connection.
- 20** If additional battery modules are to be used, plug the battery cord of the second module into the battery connector of the first module after pivoting the battery connector guard out of the way. Follow this procedure for each additional battery module.
- 21** Remove the battery circuit breaker tie from the circuit breaker on all battery modules.
- 22** Make sure the equipment to be protected by the UPS is powered off.
- 23** If you are using a Remote Emergency Power-Off (REPO) switch, follow the instructions in the following section “REPO Installation.”
- 24** Start the UPS according to the “UPS with BDM Startup” procedure on page 32.

REPO Installation

The REPO switch is a customer-supplied switch that can disconnect UPS output voltage from your protected equipment. If you are using a REPO switch, you need a junction box, external wiring, and a switch with the following specifications:

- The switch should be a wall-mounted, momentary-contact, normally open, pushbutton switch.
- Minimum ratings of 240 Vac and 35 mA.
- Wire should be 18 AWG minimum.



Caution: *The black and white REPO wires are at high-voltage potential (240V). Refer to your local electrical code for proper installation of the high-voltage REPO wires.*

The optional three-wire REPO cord (see Figure 9) can be ordered from the manufacturer. The green wire is a safety ground for the REPO conduit. The REPO function activates when the black and white wires of the optional EPO cord are shorted together.

- 1** Ground the green REPO wire to the junction box.
- 2** Connect the REPO cord to the conduit inside a junction box by twisting the ends of exposed wire together with the wire nuts (see Figure 9). Twist the wires until tight.
- 3** Pivot the REPO receptacle guard out of the way, plug the REPO plug/receptacle PPU connector into the REPO receptacle on the PPU rear panel and twist the connector in place (see Figure 4 on page 24).

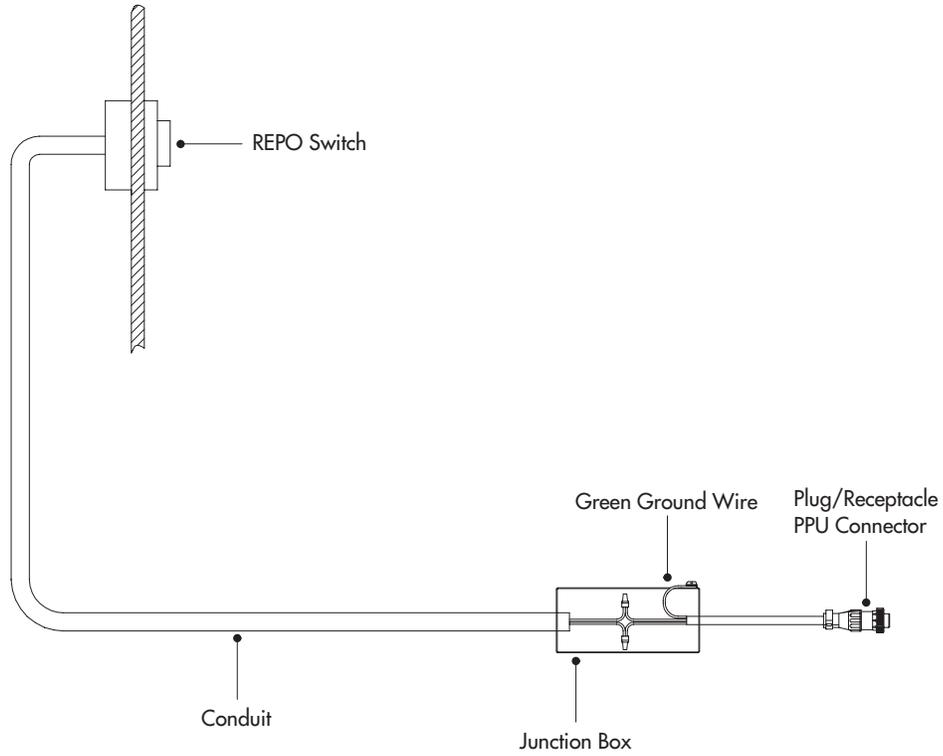


Figure 9. Standard REPO Cord

If you are using the optional REPO cord junction box, place the conduit through the access hole on the junction box. Connect the exposed conduit wires to the corresponding compression terminals (see the following table). Tighten the compression terminals with a screwdriver (see Figure 10).

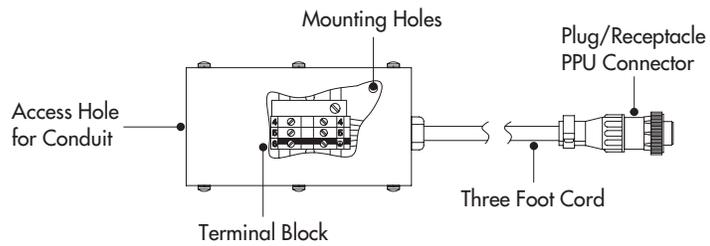


Figure 10. Optional REPO Cord Junction Box

Optional REPO Cord Junction Box Connections			
Wire Function	Terminal Position	Terminal Wire Size Rating	Suggested Wire Size
REPO	L1	TB1-4	12-22 AWG (4.0 mm ²)
	L2	TB1-5	
	Ground	TB1-6	

NOTE: The REPO function activates when L1 and L2 are shorted together.

UPS with BDM Startup

To start up the UPS:

- 1** Make sure the correct UPS output voltage is selected (see Step 9 on page 25).
- 2** Turn on the equipment that is connected to the UPS.
- 3** Make sure the input breaker on the BDM rear panel is in the OFF (O) position (see Figure 5 on page 25).
- 4** Turn the Bypass switch, located on the BDM rear panel, is in the NORMAL position (see Figure 5 on page 25).
- 5** If your BDM is hardwired, supply utility power to the UPS; skip to Step 8.
- 6** If your BDM is a plug/receptacle unit, plug the input power cord into the utility input receptacle on the BDM rear panel.
- 7** Plug the input power cord into a grounded, three-wire, AC receptacle that has been wired in accordance with NEC specifications or national wiring rules. See “Specifications” on page 53 for the input current/output voltage requirements.

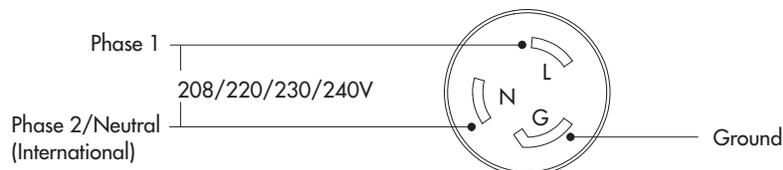


Figure 11. L6-30 Receptacle

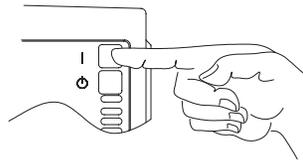
- 8** Switch the battery circuit breaker to the ON (|) position (see Figure 4 on page 24) on each battery module connected to the PPU.

Each battery module performs a self-test and then enters normal operation. The battery module startup should take about three seconds.

- 9 For plug/receptacle units, make sure circuit protectors for output receptacles are in the ON position (pushed in).
- 10 Switch the PPU input breaker to the ON (|) position (see Figure 4 on page 24).
- 11 Switch the BDM input breaker to the ON (|) position (see Figure 5 on page 25).

The UPS performs diagnostic tests and enters Normal Mode with the equipment (load) offline. The ~ Indicator remains lit. The startup should take about 15 seconds.

- 12 Press and hold the Output | On button until you hear the UPS beep (approximately one second).



The ~ Indicator remains lit and the Self Test Indicator turns on. The front panel displays the percentage of full load being applied to the UPS. The UPS is now in Normal Mode with the load online. See “Normal Mode” on page 36 for more information.

- 13 If you connected a REPO switch to the UPS, test the switch while the UPS is operating to ensure proper operation.

Press the REPO switch. The UPS shuts down and stops providing power to the equipment. To restart the UPS, follow the startup procedure beginning on page 32.

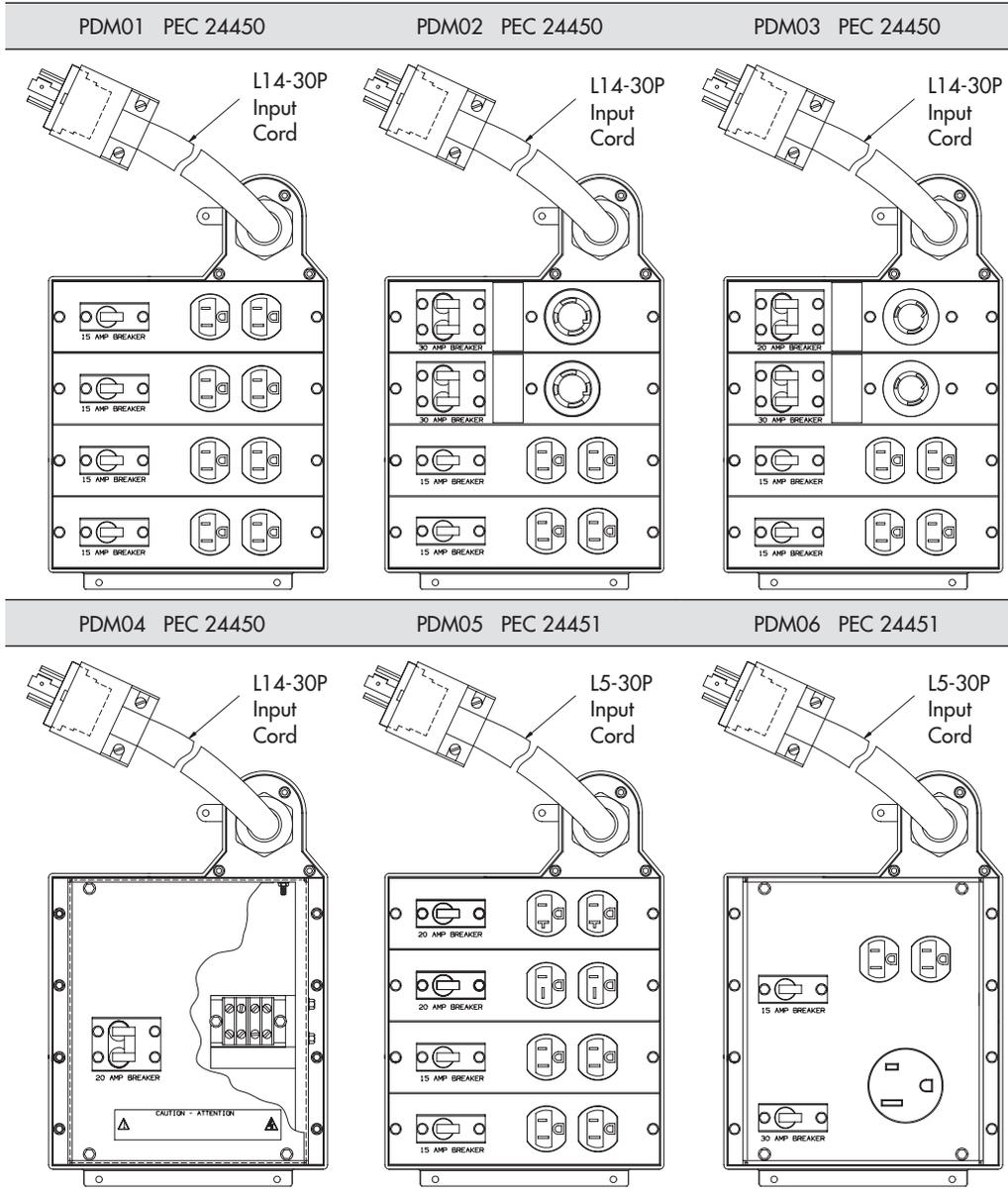


Note: *If the REPO test fails and the UPS does not shutdown, contact your Service Representative.*

Troubleshooting Tips

If you encounter any problems during startup, see “Troubleshooting” on page 59. The UPS is shipped with the battery module(s) charged. However, it may lose some of its charge during shipping and storage. You can use the UPS immediately after unpacking, but it may not provide the full-rated backup time during a power failure. Upon initial startup, operate the UPS for approximately 8 hours to ensure the battery is fully charged and full backup time is available. If the I3 Battery Condition indicator flashes, operate the UPS for 24 hours to charge the battery.

EPDM Configurations



This chapter covers the operation of the UPS including front panel functions, operating modes, using the Battery Start feature, shutting down the UPS, and using the Bypass/Distribution Module.

UPS Front Panel

The UPS front panel has three distinct functions:

- Displays the UPS operational mode (Normal, Bypass, or Battery).
- Displays any alarm conditions present during operation (the indicators flash).
- Displays the loading percentage during Normal Mode and the battery capacity during Battery Mode.

You can also use the front panel to configure UPS communication options. See “Front Panel Communications Access” on page 46 for information.

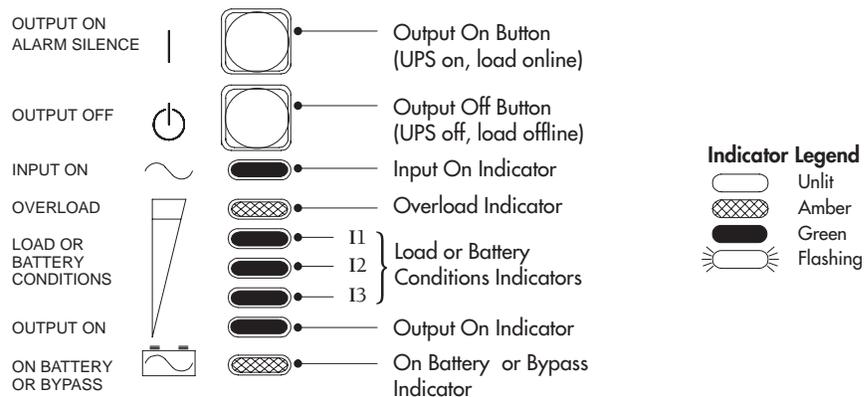


Figure 12. UPS Front Panel

Operating Modes

After you install and apply power to the UPS, the UPS filters and regulates incoming AC power, eliminating noise and voltage spikes, and provides consistent power to your equipment (see Figure 13). While power is applied to the UPS, the maintenance-free battery is automatically kept in a fully-charged condition.

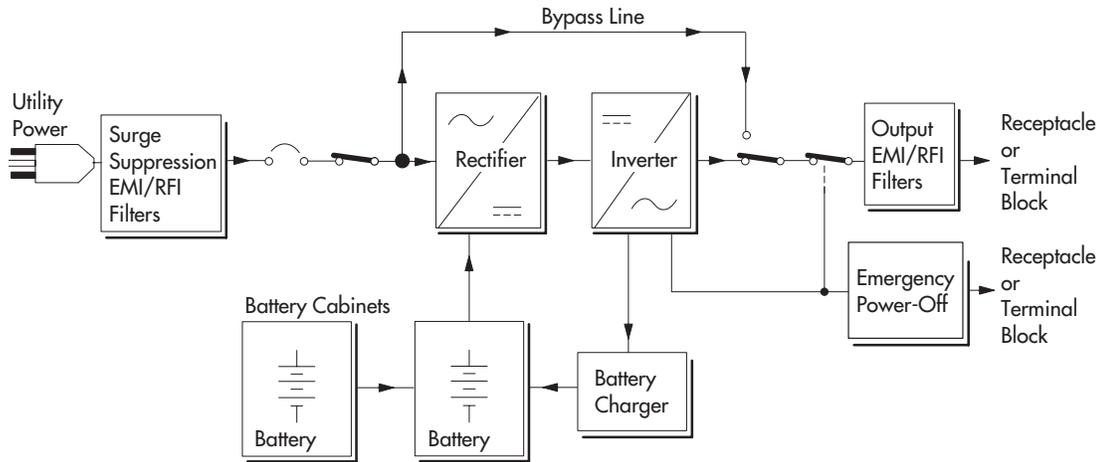


Figure 13. UPS Block Diagram

Normal Mode

During Normal Mode, the ~ Indicator illuminates and the front panel displays the percentage of UPS load capacity being used by the protected equipment (see Figure 14).

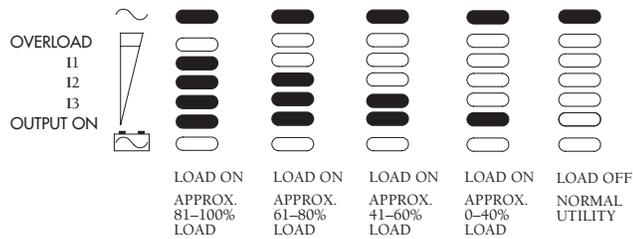


Figure 14. Normal Operation Indicators

Bypass Mode

The ~ Indicator and the  Indicator illuminate simultaneously, indicating Bypass Mode (see Figure 15). When the UPS is in Bypass Mode, the load is powered by utility power. However, utility power continues to be passively filtered by the UPS.

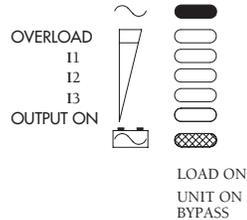


Figure 15. Bypass Operation Indicators

Battery Mode

When the UPS is operating during a power outage, the alarm beeps several times initially, and then once every 10 seconds while in Battery Mode. The  Indicator illuminates. The front panel displays the approximate percentage of battery capacity remaining (see Figure 16). When the utility power returns, the UPS switches to Normal Mode operation while the battery recharges.

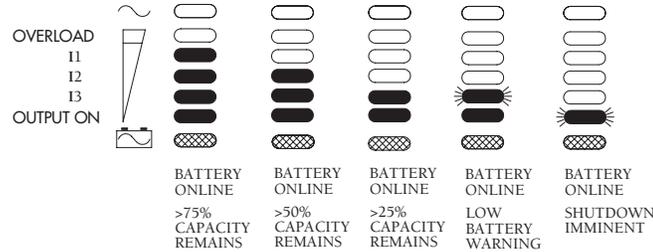


Figure 16. Battery Operation Indicators

If battery capacity becomes low while in Battery Mode, the I3 Indicator begins to flash and the Output On Indicator remains lit, indicating approximately two minutes before UPS shutdown. The alarm beeps every two seconds.

When shutdown is imminent, the Output On Indicator flashes. These warnings are approximate, and the actual time to shutdown may vary significantly. Once these warnings are indicated, immediately complete and save your work to prevent data loss and similar difficulties. When utility power is restored after the UPS shuts down, the UPS automatically connects to the load when the startup is complete.

Diagnostics

The UPS periodically performs diagnostic tests while the unit is operating in Normal Mode, ensuring proper operation. These tests include:

- Self Test
- Utility Verification Test
- Battery Discharge Test
- Over Temperature Test

The UPS also runs a series of over 20 internal tests when power is first applied. If a diagnostic test fails, see Chapter 7, “Troubleshooting” on page 59.

Battery Test on Demand

You can perform a battery test on the UPS while it is operating in Normal Mode by pressing the Output | On button. The UPS automatically distributes some of the load to the batteries for 30 seconds and tests the battery’s performance.

Battery Start



Note: Before using this feature, the UPS must have been powered by utility power at least once.

This feature allows you to start the UPS without utility power. When utility power is unavailable, press and hold the Output | On button until the alarm beeps.

The UPS supplies power to your equipment and goes into Battery Mode. The  Indicator remains lit and the front panel displays the percentage of battery capacity remaining to the UPS. This process should take about 15 seconds.

UPS Shutdown

Performing a UPS shutdown turns off the power to your protected equipment. Make sure the equipment is prepared for a power-off before shutting down the UPS. To perform a UPS shutdown:



Note: Do not perform a UPS shutdown if you want to use the Maintenance Bypass feature on the BDM (see page 40).

- 1 Press and hold the Output  button until the long beep ceases (approximately three seconds).
The  Indicator remains lit indicating Normal Mode, load offline.
- 2 Switch the power processing unit input breaker to the OFF (O) position.
The UPS enters Battery Mode for several seconds. The  Indicator turns off and the UPS shuts down.
- 3 Unplug or remove utility power from the UPS.
- 4 When all LEDs are no longer illuminated on the UPS, switch the battery circuit breaker to the OFF (O) position on each battery module.

Changing the Output Voltage

To change the operating voltage of the UPS:

- 1 Perform a UPS shutdown as described in the previous section.
- 2 Select the new voltage (see Step 9 on page 25).
- 3 Restart the UPS by performing a UPS startup as described on page 32.

Using the BDM

The BDM provides continuous online power for your equipment. With the BDM, you can replace or upgrade the UPS without losing power to the load. Figure 17 shows the operation of the UPS with the BDM.

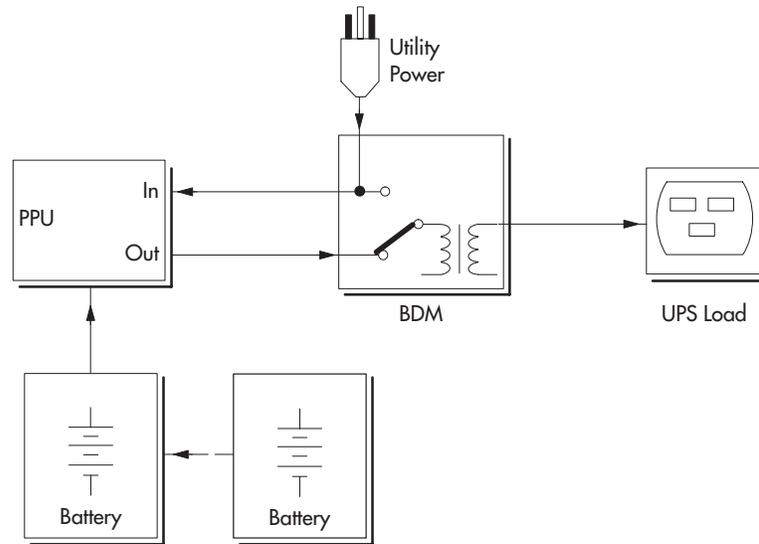


Figure 17. UPS and BDM Block Diagram

Using Maintenance Bypass

Use the following procedure to transfer the critical load to Maintenance Bypass (AC Line operation) and remove the PPU:

- 1** Turn the Bypass switch on the BDM to the BYPASS position (see Figure 18). The BDM is now powering your equipment from utility power.
- 2** Press and hold the Output  Off button until the long beep ceases (approximately three seconds). The  Indicator remains lit.
- 3** Switch the PPU input breaker to the OFF (O) position.
The UPS enters Battery Mode for several seconds. The  Indicator turns off and the UPS shuts down.
- 4** Remove the cord connections to the back of the PPU.
- 5** Turn the battery circuit breaker on all battery modules to the OFF (O) position.
- 6** Disconnect the battery connector on the PPU rear panel.

7 Remove the PPU.

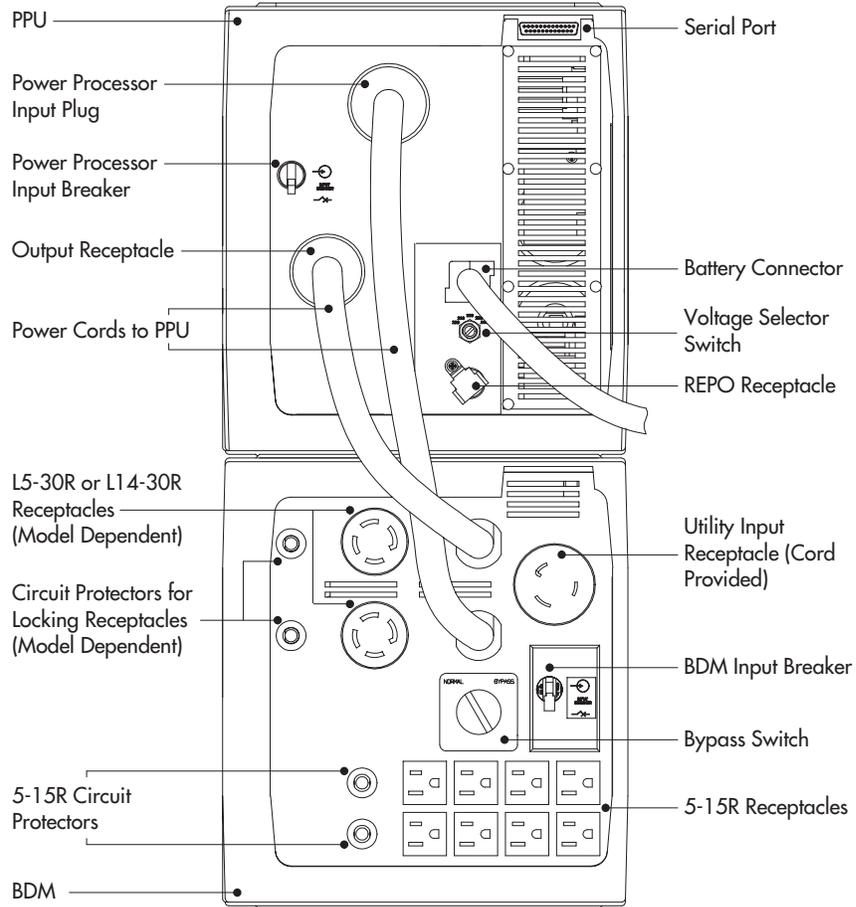


Figure 18. UPS with BDM Rear Panel Connections

4 UPS Operation

Use the following procedure to reinstall the PPU and transfer the critical load from Maintenance Bypass (AC Line operation) to the PPU:

- 1** Reconnect the battery module(s) to the battery connector on the PPU rear panel.
- 2** Turn the battery circuit breaker on all battery modules to the ON (|) position.
- 3** Make sure the correct UPS output voltage is selected according to the BDM model:

BDM Model Number	UPS Voltage Selector Switch Position*
208: 120/208 Hardwired	Set to 208V for 120/208V BDM output Set to 220V for 127/220V BDM output (60-Hz units only)
208: 120 L5-30R	208
208: 120/208 L6-20R	208
208: 120/208 L6-30R	208
208: 120/240 L14-30R	208
240: 120/240 Hardwired	
240: 120/240 L5-30R	Set to 200V for 100/200V BDM output
240: 120/240 L6-20R	Set to 220V for 110/220V BDM output
240: 120/240 L6-30R	Set to 230V for 115/230V BDM output
240: 120/240 L14-30R	Set to 240V for 120/240V BDM output
240: 120/240E Hardwired	

*The UPS output voltage should match local voltages.

Using a screwdriver, turn the switch to the corresponding position of the output voltage required (see Figure 19). The output voltage is factory-set to 220V.



Caution: Do not turn the Voltage Selector switch while the UPS is operating (see “Changing the Output Voltage” on page 39). Changing the output voltage while the UPS is operating may cause an emergency power-off.

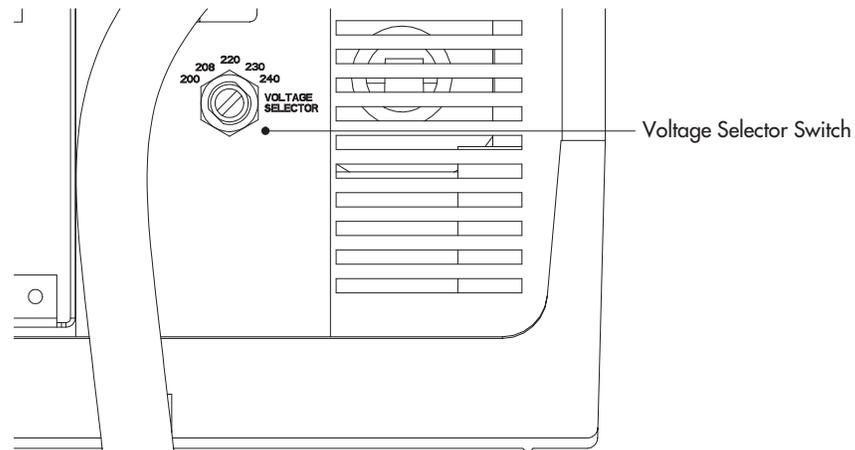


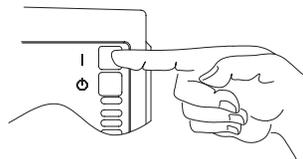
Figure 19. Voltage Selector Switch

- 4** Plug the input and output cords of the BDM into the power connectors on the PPU as shown in Figure 18 on page 41.

- 5** Switch the PPU input breaker to the ON (|) position.

After a short delay (approximately three seconds), the UPS front panel indicators turn on and cycle through several times. The \sim and  Indicators remain lit for several seconds (UPS in Bypass Mode).

- 6** Press and hold the Output | On button until you hear the UPS beep (approximately one second).



The \sim Indicator remains lit and the Self Test Indicator turns on, indicating the UPS is online.

- 7** Turn the Bypass switch on the BDM to the NORMAL position.

The front panel displays the percentage of full load being applied to the UPS. Your UPS is now in Normal Mode with the load online.

The UPS is equipped with a communications interface port that allows communication with a wide variety of external devices including:

- Video or dumb terminal
- Serial printer
- Computer with power management or shutdown software

The serial port enables you to monitor and record diagnostic data with the following communication interfaces:

- Serial Communications Interface
 - Terminal Mode
 - Data Dump Mode
 - Printer Mode, 2400 Baud, with Novell Contacts (default)
 - Printer Mode, 19200 Baud, with Novell Contacts
- LAN Configuration
 - Novell®-Style Network Interface
 - 3Com®-Style Network Interface
 - AS/400®-Style Network Interface
 - Custom User-Configurable Interface

Initial Communications Settings

The UPS is factory-configured for Printer Mode, 2400 baud, with Novell contacts. To verify the initial UPS communications configuration, you can:

- Look at the shipping label.
- Use the Display Configuration option on the UPS Serial Communications Menu (see page 47).

If you want to change the UPS configuration settings, use the front panel or the UPS Serial Communications Menu.

Front Panel Communications Access

Before you access the front panel, review the following configurations and note the indicator that corresponds with the communication mode.



Note: Only the Printer Mode front panel options change the baud rate. Use the UPS Serial Communications Menu to select other baud rates (see page 47).

FRONT PANEL COMMUNICATION OPTIONS	<p>Printer Mode, 2400 Baud, Novell Contacts Select this mode for the power management software.</p>	<p>Indicator Legend</p> <ul style="list-style-type: none"> Unlit Amber Green Flashing 	
	<p>Novell-Style LAN Contacts (Default) Any baud rate other than 2400 or 19200 with Printer Mode, or not Printer Mode.</p>		<p>3Com LAN Manager Any communication mode and baud rate option.</p>
	<p>AS/400-Style LAN Contacts, No Serial Select this mode for the monitoring software.</p>		<p>Printer Mode, 19200 Baud (network devices), Novell Contacts</p>

Figure 20. Front Panel Communication Options

To access the front panel communication options, perform the following steps:

- 1 If the UPS is powered on, prepare your equipment for shutdown.
Press and hold the Output Off button until the long beep ceases (approximately three seconds).
The Indicator remains lit indicating Normal Mode, load offline.
Switch the power processing unit input breaker to the OFF (O) position.
Wait until all indicators turn off and then continue to the next step.

- 2** Switch the PPU input breaker to the ON (|) position while pressing the Output  Off button until the alarm beeps. All indicators begin flashing.
- 3** Press and hold the Output  Off button a second time until the alarm beeps again.

A single indicator, corresponding with the current setting, remains flashing.
- 4** Press the Output  Off button to scroll through the communication options, top to bottom. Each time you press the button, the UPS beeps and the next indicator flashes.

 **Note:** *The setup automatically aborts after 30 seconds and the UPS switches back to Normal Mode with the original configuration.*

- 5** Press and hold the Output | On button until the alarm beeps to select and save a communication option. Failure to release the button immediately after the beep will cause the UPS to abort the setup.
- 6** Press the Output | On button again to return the UPS to Normal Mode.

 **Note:** *Printer Mode selections are the only serial communication modes available from the front panel.*

UPS Serial Communications Menu

With the UPS Serial Communications (Main) Menu, you can view or select UPS communication modes, baud rates, and LAN configurations. To change or display the current communications configuration:

- 1** Connect the UPS serial port to a video monitor with a serial interface or to your computer's serial port. If you are using shutdown software, the UPS should already be connected to your computer.
- 2** Set your terminal so that it matches the baud rate of the UPS (usually 2400 baud, 8 bits, No parity, 1 stop bit). Refer to your terminal or operating system documentation for details on configuring your terminal communication settings.
- 3** At the terminal prompt, press **Control-C** until the UPS Serial Communications Menu appears.

```

UPS SERIAL COMMUNICATIONS MENU
SELECT OPERATION MODE
D >   DISPLAY CONFIGURATION
1 >   CONTINUOUS DUMP
2 >   POLLED DUMP
3 >   SMART DUMP
A >   ASCII TERMINAL
B >   VT100 TERMINAL
P >   PRINTER DUMP
L >   LAN CONFIGURATION
Z >   SET BAUD RATE
Q >   QUIT WITHOUT SAVING NEW CONFIGURATION
S >   SAVE AND RESTART
ENTER SELECTION > > >

```

- 4** Select a menu option by typing the corresponding letter or number key. All menu selections are single keystrokes and are not case-sensitive.

D > Display Configuration displays the current communication settings and the new settings that you have selected prior to saving them. The new settings are not effective until you select save from the Main Menu.

```

Catalog # :      D15120112520
Serial #  :      BK393B0274
Version #   :      02.00
COMM mode:   Printer
Baud x100:   024
LAN mode:    Novell

New COMM:    ASCII
New Baud:    096
New LAN:     Novell

Press space bar to continue

```



Note: *Catalog #, Serial #, and Version # are all identification numbers unique to your UPS and can also be found on the UPS nameplate.*

1 > Continuous Dump The UPS regularly transmits status information to the computer. Baud rates of 1200 to 2400 are recommended to reduce host computer overhead when using this mode.

2 > Polled Dump Status information is transmitted only when requested by a poll character (Control-E).

3 > Smart Dump Status information is transmitted when polled, as in the previous mode. However, the transmission also occurs automatically whenever UPS status changes. For example, if there is a power outage, UPS status information changes and is therefore, automatically transmitted.

A > ASCII Terminal The UPS displays the formatted data on the attached video terminal.

B > VT100 Terminal The UPS displays the formatted data on the attached video terminal.

P > Printer Dump The UPS prints the formatted data on the attached printer.

L > LAN Configuration allows you to configure the UPS for a new LAN mode and displays the Select LAN Configuration Menu.

SELECT LAN CONFIGURATION

```
1 > NOVELL
2 > AS400
3 > 3-COM/LAN MANAGER
4 > CUSTOM CONFIGURATION
Q > TO QUIT THIS MENU
```

ENTER SELECTION >+>

Select the **AS400** option if you are using monitoring software to monitor the UPS.

The **Custom Configuration** option has two screens: the first screen has options available for inverter shutdown, and the second screen has options available for the contact configuration. Consult your shutdown software documentation for details on the required signal states for configuring LAN communications.

SELECT CUSTOM LAN CONFIGURATION

Instructions: Choose the desired inverter shutdown function.
Warning: It is recommended that this feature should not be used with normal RS-232 communications, conflicts may occur.

```
A > Inverter shutdown control is enabled active HIGH (+12V)
B > Inverter shutdown control is enabled active LOW (-12V)
C > Inverter shutdown control is disabled
Q > TO QUIT THIS MENU
```

ENTER SELECTION >=>

SELECT CUSTOM LAN CONFIGURATION

Instructions: Choose the desired contact configuration.

- 1 > UTIL_FAIL is active closed, LOW_BATT is active closed
- 2 > UTIL_FAIL is active open, LOW_BATT is active closed
- 3 > UTIL_FAIL is active closed, LOW_BATT is active open
- 4 > UTIL_FAIL is active open, LOW_BATT is active open
- Q > TO QUIT THIS MENU

ENTER SELECTION >=>

Z > Set Baud Rate allows you to select a new baud rate. The Select Baud Rate Menu displays a list of baud rate options.

SELECT BAUD RATE

- 2 > 300
- 4 > 1200
- 5 > 2400
- 6 > 4800
- 7 > 9600
- 8 > 19200
- Q > QUIT THIS MENU

ENTER SELECTION >->

- 5** To save the configuration settings, type **S** at the Main Menu prompt. The UPS operates and communicates under the new configuration, and defaults to these settings each time it is started.

If you want to abandon the selections you have made, type **Q** to quit.



Note: Any changes you make to the UPS communications configuration must correspond to the communications equipment you are using. In particular, new baud rate selections for the UPS must match your communications equipment.

UPS Communications Interface Port

In addition to configuring the UPS for specific communication options, you must also ensure proper use of the serial port when connecting the UPS to your network or monitoring equipment.

Note: *Semiconductor switch contacts are rated at a maximum current of 50 mA and a maximum of 40 Vdc across the contacts.*

Use only the pins specified for your communications configuration. The use of any additional pins for any of the following interfaces can cause interference with system communications.

Even though your network uses the specified signal lines, the pins assigned to these signals at the network end of the cable may vary with those of the UPS serial port. The connector body and style may vary as well.

Note: *Standard, pin-for-pin cables may not work correctly. Consult your network software or server manuals for system shutdown pin assignments.*

The UPS serial port complies with EIA RS-232 standards. RS-232 specifies a maximum cable length of 50 feet. See Figure 21 for the location of the serial port.

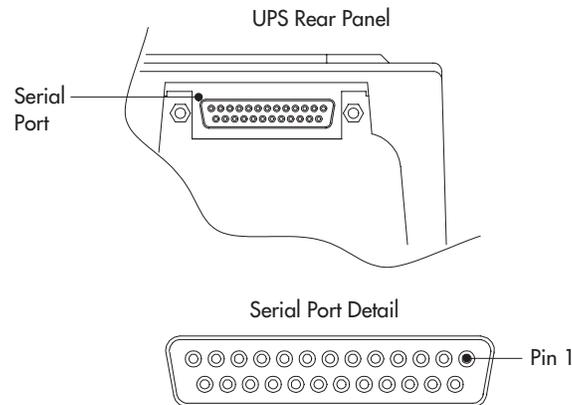


Figure 21. Serial Port Location

Communications Mode Reference Chart

The following chart defines the UPS serial port contacts. Serial communication is not available with 3Com and AS/400 network configurations. Use only the applicable pins for the selected communication mode; otherwise, interference problems may occur.

Communication Mode	Function	Signal Name	Pin No.	True Condition
Serial	Data to UPS	RS232 TxD	2	N/A
	Data from UPS	RS232 RxD	3	N/A
	Signal Ground		7	
Novell	Battery On	ON.AC	14/16	Open
	Low Battery	TWO.MIN	23/24	Closed
	Signal Ground		7/15/25	
Novell (Lucent Technologies Default)	Battery On	ON.AC	14/16	Closed
	Low Battery	TWO.MIN	23/24	Closed
	Signal Ground		7/15/25	
3Com	Shutdown (Remote)	SHUT.DOWN	2	Positive Voltage
	Low Battery	LOW.BATT	9	Positive Voltage
	Battery On	PWR.FAIL	10	Positive Voltage
	Signal Ground		7	
AS/400	UPS Available	UPS Available	11/13	Closed
	Battery On	Utility Failure	14/16	Closed
	Bypass	UPS Offline	17/19	Closed
	Low Battery	Low Battery	23/24	Closed
	Signal Ground		12/15/18/25	



Note: Pin numbers separated by a forward slash (/) are connected together internally.

Model 6000 Specifications

The following model specifications assume:

- 88% efficiency at full load (normal mode)
- Input power factor of 0.95
- 84% efficiency running on battery

Model 5000/6000 PPU (Nominal Operating Specifications)						
Output VA	Output Voltage	Output Watts	Input Current	Output Current	Normal (BTUs/hr)	On Battery (BTUs/hr)
5000	200	3350	19.6A	25.0A	< 1600	< 2200
5200	208	3500	19.7A	25.0A	< 1600	< 2300
5500	220	3700	19.7A	25.0A	< 1700	< 2400
5750	230	3850	19.6A	25.0A	< 1800	< 2500
6000	240	4000	19.5A	25.0A	< 1900	< 2600

Model 5000/6000 with BDM (Nominal Operating Specifications)				
Output VA (PPU)	Output Voltage (PPU)	Output Watts	Normal (BTUs/hr)	On Battery (BTUs/hr)
5000	200	3050	< 2600	< 3200
5200	208	3200	< 2600	< 3300
5500	220	3400	< 2700	< 3400
5750	230	3550	< 2800	< 3500
6000	240	3700	< 2900	< 3600

6 Specifications

Model 4500 PPU (Nominal Operating Specifications)						
Output VA	Output Voltage	Output Watts	Input Current	Output Current	Normal (BTUs/hr)	On Battery (BTUs/hr)
3750	200	2500	14.6A	19.0A	< 1200	< 1600
3900	208	2600	14.6A	19.0A	< 1200	< 1700
4125	220	2750	14.6A	19.0A	< 1300	< 1800
4300	230	2900	14.6A	19.0A	< 1400	< 1900
4500	240	3000	14.6A	19.0A	< 1400	< 1900

Model 4500 with BDM (Nominal Operating Specifications)				
Output VA (PPU)	Output Voltage (PPU)	Output Watts	Normal (BTUs/hr)	On Battery (BTUs/hr)
3750	200	2275	< 1900	< 2400
3900	208	2375	< 2000	< 2400
4125	220	2525	< 2000	< 2500
4300	230	2675	< 2100	< 2600
4500	240	2775	< 2200	< 2700

UPS Physical Specifications

Parameter	PPU	Battery Module	BDM Module
Height	283 mm (11.13 in)	142.5 mm (5.61 in)	283 mm (11.13 in)
Width	252 mm (9.91 in)	252 mm (9.91 in)	252 mm (9.91 in)
Depth	Plug/Receptacle: 406 mm (16 in) Hardwired: 463 mm (18.25 in)	400 mm (15.75 in)	Plug/Receptacle: 406 mm (16 in) Hardwired: 463 mm (18.25 in)
Weight	18 kg (39 lb)	23.6 kg (52 lb)	37 kg (82 lb)

UPS Technical Specifications

Input Voltage Range	170 to 276 Vac
Input Power Factor	0.95 Typical
Frequency Range	50/60 Hz \pm 3 Hz
Surge Protection	IEC 801-4
Output Wave Form	Sine wave
Output Voltage	200/208/220/230/240 Vac \pm 3%
Common Mode Noise Rejection	>60 dB @ 100 kHz
Transverse Mode Noise Rejection	>80 dB @ 100 kHz
Input Cord	Detachable 2-meter cord
Outlets	One L6-30R
Batteries (10 per module)	12 Vdc, 5 Ah, maintenance-free rechargeable lead acid
Battery Module Voltage	120 Vdc
Operating Environment	Temperature: 10°C to 40°C (50°F to 104°F) Humidity: 5 to 95% (noncondensing)
Agency Approvals	Safety: EN50091-1 UL 1778 cUL EMC: FCC Part 15 Class A EN50091-2

6 Specifications

Electrical Specifications for the Model 6000 with BDM

Use the following tables to determine load wiring requirements when the BDM is used with a power processing unit. The distribution of your load on the available outputs of the BDM may affect the maximum load obtainable.

Model 5000/6000 BDM Ratings with a Model 6000 PPU				
Model	Input Utility Voltage and Selected UPS Output Voltage	Input Current	Output Voltage and Maximum Current	Maximum Output Apparent Power**
208:120/208 Hardwired	220 Vac (60 Hz only)	24A	127/220 Vac (60 Hz only), 30.0/25.0A	5500 VA
208:120/208 Hardwired	208 Vac	24A	120/208 Vac, 30.0/25.0A	5200 VA
208:120 L5-30R	208 Vac	24A	120 Vac, 43.3A*	5200 VA
208:120/208 L6-20R	208 Vac	24A	120/208 Vac, 15.0/20.0A	5200 VA
208:120/208 L6-30R	208 Vac	24A	120/208 Vac, 15.0/25.0A	5200 VA
208:120/240 L14-30R	208 Vac	24A	120/240 Vac, 15.0/21.1A	5000 VA
240:120/240 Hardwired	200 - 240 Vac	25A	100-120/200-240 Vac, 30.0/25.0A	6000 VA
240:120/240E Hardwired	200 - 240 Vac	24A	100-120/200-240 Vac, 30.0/25.0A European IT Neutral	6000 VA
240:120 L5-30R	200 - 240 Vac	24A	100-120 Vac, 48.3A*	5800 VA
240:120/240 L6-20R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/20.0A	5800 VA
240:120/240 L6-30R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/24.7A	5800 VA
240:120/240 L14-30R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/24.7A	5800 VA

*Total of currents in all available 100-120V output connections.

**Ratings based on 4000W load on BDM, plus sufficient linear inductive load to achieve the current rating of the input plug, not to exceed VA rating of PPU.

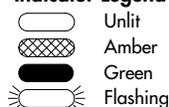
NOTE: Input and output currents are approximately the same when load is powered through bypass.

Model 5000/6000 BDM Ratings with a Model 4500 PPU				
BDM Model	Input Utility Voltage and Selected UPS Output Voltage	Input Current	Output Voltage and Maximum Current	Maximum Output Apparent Power**
208:120/208 Hardwired	220 Vac (60 Hz only)	24A	127/220 Vac (60 Hz only), 30.0/25.0A	4125 VA
208:120/208 Hardwired	208 Vac	24A	120/208 Vac, 30.0/25.0A	3900 VA
208:120 L5-30R	208 Vac	24A	120 Vac, 43.3A*	3900 VA
208:120/208 L6-20R	208 Vac	24A	120/208 Vac, 15.0/20.0A	3900 VA
208:120/208 L6-30R	208 Vac	24A	120/208 Vac, 15.0/25.0A	3900 VA
208:120/240 L14-30R	208 Vac	24A	120/240 Vac, 15.0/21.1A	3900 VA
240:120/240 Hardwired	200 - 240 Vac	25A	100-120/200-240 Vac, 30.0/25.0A	3750 VA @ 200V 4125 VA @ 220V 4300 VA @ 230V 4500 VA @ 240V
240:120/240E Hardwired	200 - 240 Vac	24A	100-120/200-240 Vac, 30.0/25.0A European IT Neutral	4500 VA @ 120V 4500 VA @ 240V
240:120 L5-30R	200 - 240 Vac	24A	100-120 Vac, 48.3A*	4500 VA @ 120V 4500 VA @ 240V
240:120/240 L6-20R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/20.0A	4500 VA @ 120V 4500 VA @ 240V
240:120/240 L6-30R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/24.7A	4500 VA @ 120V 4500 VA @ 240V
240:120/240 L14-30R	200 - 240 Vac	24A	100-120/200-240 Vac, 15.0/24.7A	4500 VA @ 120V 4500 VA @ 240V

*Total of currents in all available 100-120V output connections.
**Ratings based on 4000W load on BDM, plus sufficient linear inductive load to achieve the current rating of the input plug, not to exceed the real-power or apparent-power rating of the PPU.
NOTE: Input and output currents are approximately the same when load is powered through bypass.

The UPS is designed for durable, automatic operation and also alerts you whenever potential operating problems may occur. Use the following troubleshooting chart to determine the UPS alarm condition.

Indicator Legend



Condition	Possible Cause	Action
UPS does not turn on.	UPS is not correctly connected to the power source.	Check connections to the power source.
	UPS input breaker is off.	Reduce load, then reset breaker.
Load does not turn on.	UPS has not been activated.	Press the Output On button for one second, then release.
UPS beeps occasionally.	Normal operation.	None. UPS is protecting your system.
 Indicator remains lit, even though line voltage is present.	Utility line is out of specification.	Test wall socket, repair as required.
	UPS input breaker is tripped.	Reduce load, then reset breaker.
UPS does not provide the expected backup time.	Battery circuit breakers are in the OFF (O) position.	Turn the battery circuit breaker to the ON () position for all connected battery modules.
	Low battery capacity.	Allow battery to charge for 24 hours, then retest.
	Protected equipment power requirements exceed UPS capacity.	Reduce load, then retest.
Communications do not function properly.	Incorrect communications cabling.	Verify cable integrity (see page 51).
	Incorrect baud rate.	Select a new baud rate (see page 50).
	Incorrect communication mode.	Select a new communication mode (see Chapter 5).
Remote Emergency Power-Off switch does not shut down the UPS.	REPO switch is not wired properly.	Check connections and contact your Service Representative.

7 Troubleshooting

Condition	Possible Cause	Action
Bypass/Distribution Module does not deliver expected voltage.	Voltage Selector switch on the power processing unit is not set properly.	Shut down the UPS (see page 39). Select proper voltage position (see page 25) and restart the UPS (see page 32).
	Circuit protectors or input breakers on the BDM are tripped or off.	Check the load for a fault condition, then reset circuit protectors or input breaker.
<p>OVERLOAD 11 12 13 OUTPUT ON</p>	Power requirements exceed UPS capacity (100–105% overload). The alarm beeps every 5 seconds and the Overload Indicator flashes every second as long as the overload exists.	Your UPS continues to operate, but may switch to Bypass Mode if the load increases. Reduce load, then reset the UPS (see page 61).
	Overload is greater than 106%. The alarm beeps every 5 seconds, the Overload Indicator flashes, and the UPS switches to Bypass Mode.	Reduce load, then reset the UPS (see page 61). You can also obtain a larger capacity UPS.
<p>OVERLOAD 11 12 13 OUTPUT ON</p>	The utility line voltage and frequency are out of specification. The alarm beeps every 5 seconds and the ~ Indicator flashes.	The inverter remains online, deriving power from the utility until it is no longer acceptable. Check the unit configuration. Refer to the product specifications (see page 53).
	UPS internal temperature is too high. The alarm beeps every 5 seconds and the UPS switches to Bypass Mode for approximately 10 minutes, allowing the UPS to cool down.	Shut down the UPS. Clear vents. Remove any heat sources. Wait approximately 5 minutes and retry. Contact your service representative if condition persists.
<p>OVERLOAD 11 12 13 OUTPUT ON</p>	Weak battery while in Normal Mode. The alarm beeps every 5 seconds.	Allow the battery to charge for 24 hours, then retest. Have batteries replaced if condition persists.
	Battery breaker is open (O).	Make sure the battery module breaker is in the ON () position.
	Battery module is not properly connected to the UPS.	Make sure battery cords are connected.

Condition	Possible Cause	Action
<p>OVERLOAD 11 12 13 OUTPUT ON</p>	<p>Weak battery while in Bypass Mode.</p>	<p>This usually indicates that the batteries need replacing or the UPS requires service. Contact your service representative.</p>
<p>OVERLOAD 11 12 13 OUTPUT ON</p>	<p>Self Test failure. UPS internal problem.</p>	<p>The UPS may switch to Bypass Mode, depending on the circumstances. Reset the UPS (see below). Contact your service representative if condition persists.</p>
<p>NORMAL REPLACE</p>	<p>Weak battery.</p>	<p>Make sure battery is connected and the battery circuit breaker is in the ON () position. If battery is properly connected, allow the battery to charge for 24 hours. Retest. Have batteries replaced if condition persists.</p>

Resetting the UPS

To reset the UPS while an alarm condition is present, press the Output | On button until the UPS alarm beeps.

Silencing the Alarm

To silence the alarm for an existing fault, press and hold the Output | On button for one second. The alarm becomes quiet. If UPS status changes, the alarm beeps, overriding previous alarm silencing. Press the Output | On button again to silence the alarm.

Service and Support

The troubleshooting chart on page 59 covers most of the difficulties you may encounter during normal operations. If you have any questions or problems with your UPS, call your Lucent Technologies service representative or the appropriate telephone number on the service label of your UPS.

Please have the following information ready when you call:

- Model number
- Serial number
- Version number (if available)
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

Parts List

Item	Comcode	Description
4500 Electronics HV	407464205	Power Processing Unit
5000/6000 Electronics HV	407464221	Power Processing Unit
BDM 01	407505833	BDM 208V Hardwired
BDM 02	407483254	BDM 240V Hardwired
BDM 03	407483262	BDM 240V Hardwired Europe
BDM 05	407464239	BDM 208V L5-30R (2) 5-1.5R (8)
BDM 06	407506609	BDM 240V L5-30R (2) 5-1.5R (8)
BDM 14	407505841	BDM 208V L14-30R (2) 5-1.5R (8)
BDM 15	407464247	BDM 240V L14-30R (2) 5-1.5R (8)
Stacking Module – 6 High	407483304	
Stacking Module – 5 High	407483296	
Stacking Module – 4 High	407483288	
Stacking Module – 3 High	407483270	
Stacking Module Spacer Cabinet	407483320	

Item	Comcode	Description
4500/5000/6000 Battery Module	407464254	5 Ah Battery Module 1 String
REPO Cord	407464288	Remote Emergency Power-Off Cord
EBC 120 Vdc 4500/5000/6000	407483346	Extended Battery Cabinet
PDM01	407465889	Cord-connected EPDM, L14-30P with (4) 5-15R2s
PDM02	407465913	Cord-connected EPDM, L14-30P with (2) 5-15R2s and (2) L14-30Rs
PDM03	407483361	Cord-connected EPDM, L14-30P with (2) 5-15R2s and (1) L6-30R, and (1) L6-20R
PDM04	407465905	Cord-connected EPDM, L14-30P with a hardwired output, 2-pole, 20A circuit breaker
PDM05	407483353	Cord-connected EPDM, L5-30P with (2) 5-15R2s, (1) 5-20R2, and (1) 5-20R2 Canadian
PDM06	407505858	Cord-connected EPDM, L5-30P with (1) 5-15R2, and (1) L5-50R

I N D E X

Numeric

- 3Com Network Interface
 - front panel configuration, 46
 - LAN Configuration Menu, 49

A

- AC Line
 - Bypass switch, 40
 - operation, 40
- air
 - exhausts, 22
 - vents, 22
- alarm
 - silencing, 61
 - UPS, 60
- Alarm Conditions
 - Battery Fault, 60
 - Over Temperature, 60
 - Overload, 60
 - Self Test Failure, 61
 - Utility Out of Spec, 60
- AS/400 Network Interface
 - front panel configuration, 46
 - LAN Configuration Menu, 49
- ASCII Terminal Mode, 49

B

- battery
 - circuit breaker, 24
 - configuration, 3
 - extension time, 3
 - input connector, 24
 - output connector, 24
 - storage, 19

- Battery Fault, condition, 60
- Battery Mode, 37
- Battery Start, 38
- Battery Test on Demand, 38
- baud rates, 47, 50
- Bypass Mode, 37
- Bypass switch, 25, 27
- Bypass/Distribution Module (BDM)
 - AC Line operation, 40
 - block diagram, 40
 - changing output voltage, 25, 42
 - hardwired, input and output connections, 27
 - Maintenance Bypass feature, 20
 - operation, 40
 - plug/receptacle
 - power output receptacles, 25
 - utility input connector, 25
 - rear panel, 25
 - specifications, 56
 - startup, 32

C

- communications
 - interface port, 51
 - modes, 47
 - UPS, 45
- Communications Mode Reference Chart, 52
- configuration settings
 - abandoning, 50
 - displaying, 48
 - front panel, 46
 - saving, 50

contact configuration, serial
port, 51

Continuous Dump Mode, 48

Control Keys
Control-C, 47
Control-E, 48

cord, power, 32, 55

Custom LAN Configuration
Menu, 49

customer service, 62

D

Data Dump Modes, 48

diagnostics, 38

Display Configuration Screen, 48

E

exiting Main Menu, 50

Extended Power Distribution
Module (EPDM), 34

F

front panel
configuring communications, 46
controls, 35
display functions, 35
indicators, 35

front panel configuration
3Com, 46
AS/400, 46
Novell, 46
printer mode, 46

H

hardwired BDM
Bypass switch, 27
input and output
terminations, 28
input breaker, 27
input cable connections, 27
output cable connections, 27
output wiring, 28
termination blocks, 29

I

indicators, front panel, 35

input cord, 32, 55

Input On Indicator, 35

installation

BDM, 20
plug/receptacle PPU
optional REPO cord junction
box, 31
REPO cord, 30
REPO switch, 30
seismic, 22

Inverter Shutdown Control, 49

L

LAN Configuration
Main Menu option, 47
menu, 49

laser printers, 4

load
definition, 3
requirements, 3

Load or Battery Conditions
Indicators, 35

LOW_BATT, 49

M

- Main Menu, 47
- Maintenance Bypass feature
 - See also Bypass/Distribution Module (BDM)*
 - activating, 40
 - deactivating, 42
- Menu
 - Custom LAN Configuration, 49
 - LAN Configuration, 49
 - Main, 47
 - Serial Communications, 47, 48
 - Set Baud Rate, 50
- Mode
 - ASCII Terminal, 49
 - Battery, 37
 - Bypass, 37
 - Communications, 47
 - Data Dump, 48
 - Normal, 36
 - Printer, 47, 49
 - Terminal, 49
 - VT100 Terminal, 49
- model specifications, 53

N

- Normal Mode, operation, 36
- Novell Network Interface
 - front panel configuration, 46
 - LAN Configuration Menu, 49

O

- On Battery or Bypass Indicator, 35
- Operating Modes, 36

- Operation
 - Battery, 37
 - Bypass, 37
 - Normal, 36
 - UPS with BDM, 40
- Output OFF Button, 35
- Output ON Button, 35
- Output On Indicator, 35
- Output Voltage Selector
 - Switch, 24
- Over temperature, condition, 60
- Overload
 - condition, 60
 - Indicator, 35

P

- physical specifications, 54
- plug/receptacle PPU
 - external battery connector, 24
 - input breaker, 24
 - installation
 - optional REPO cord junction box, 31
 - REPO cord, 30
 - power input connector, 24
 - power output receptacles, 24
 - rear panel, 24
 - REPO connectors, 24
 - serial port, 24
- Polled Dump Mode, 48
- power management
 - software, 46, 49
- Printer Mode
 - front panel configuration, 47
 - Main Menu configuration, 49
- product specifications, 53

R

- rear panel
 - battery, 24
 - hardwired, connectors, 27
 - hardwired BDM, connectors, 27
 - plug/receptacle BDM, 25
 - plug/receptacle
 - PPU, connectors, 24
 - PPU, 24
- Remote Emergency Power Off switch. *See REPO switch*
- REPO connectors, plug/receptacle
 - PPU, 24
- REPO switch
 - plug/receptacle PPU, 30
 - testing, 33
- resetting the UPS, 61

S

- safety requirements, 5
- seismic mounting, 22
- Self Test, failure, 61
- semiconductor switches, contact ratings, 51
- serial cable, 51
- serial port
 - contact configuration, 51
 - description, 45
- service, 62
- Set Baud Rate Menu, 50
- shutdown, 39
- Smart Dump Mode, 48
- specifications, 53
- Startup Tests, 38

storage temperature, 19

Switch

- Bypass, 25, 27
- Output OFF, 2
- Output ON, 2
- Output Voltage Selector, 26

system requirements, 3

T

- technical specifications, 55
- Terminal Modes, 49
- Tests
 - Battery (on demand), 38
 - Startup, 38
- troubleshooting
 - chart, 59
 - tips, 33

U

- Uninterruptible Power System, 1
- UPS
 - alarm silencing, 61
 - alarms, 60
 - block diagram, 36
 - changing output voltage, 39
 - communications, 45
 - Communications Mode
 - Reference Chart, 52
 - front panel, 35
 - operation with BDM, 40
 - operations, 35
 - resetting, 61
 - Serial Communications
 - Menu, 47, 48
 - serial port, 45
 - shutdown, 39
 - special symbols, 2
 - specifications, 53

- specifications with BDM, 56
- storage, 19
- unpacking and inspection, 19
- UTIL_FAIL, 49
- Utility Out of Spec, 60

V

- volt-amperes, 3
- VT100 Terminal Mode, 49

FCC Statement

The Lucent Technologies UPS configurations vary. Some configurations may or may not be classified by the Federal Communications Commission (FCC). If your UPS is classified by these standards, the corresponding information applies:

Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense.

European EMC Statement

Some configurations are classified under EN50091-2 as "Class-A UPS for Unrestricted Sales Distribution." For these configurations, the following applies:

Warning: This is a Class A-UPS Product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take additional measures.

EC Declaration of Conformity

Units that are labeled with a CE mark comply with the following EU directives:

73/23/EEC	Council Directive on equipment designed for use within certain voltage limits.
93/68/EEC	Amending Directive 73/23/EEC.
89/336/EEC	Council Directive relating to electromagnetic compatibility.
92/31/EEC	Amending Directive 89/336/EEC relating to EMC.

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

Lucent Technologies
Attn: Quality Assurance Department