Site Preparation, Installation and Operator's Manual

for

Lucent Technologies Series 1 Uninterruptible Power Systems

Model 2000 VA, 120V

Select Code 167-405-121
Comcode 407664366

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.

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Issue 2

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.

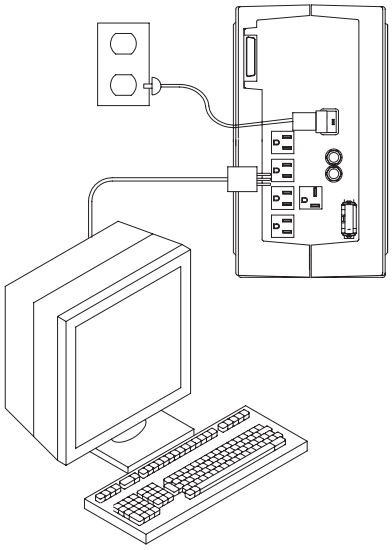
CAUTION: REFER TO OPERATOR'S MANUAL – Refer to your operator's manual for additional information.

This symbol indicates that the UPS batteries should not be discarded in the trash. The UPS contains sealed lead batteries and must be disposed of properly.

QUICK START

UPS Installation

1



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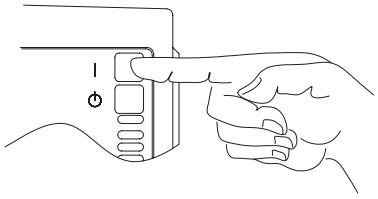
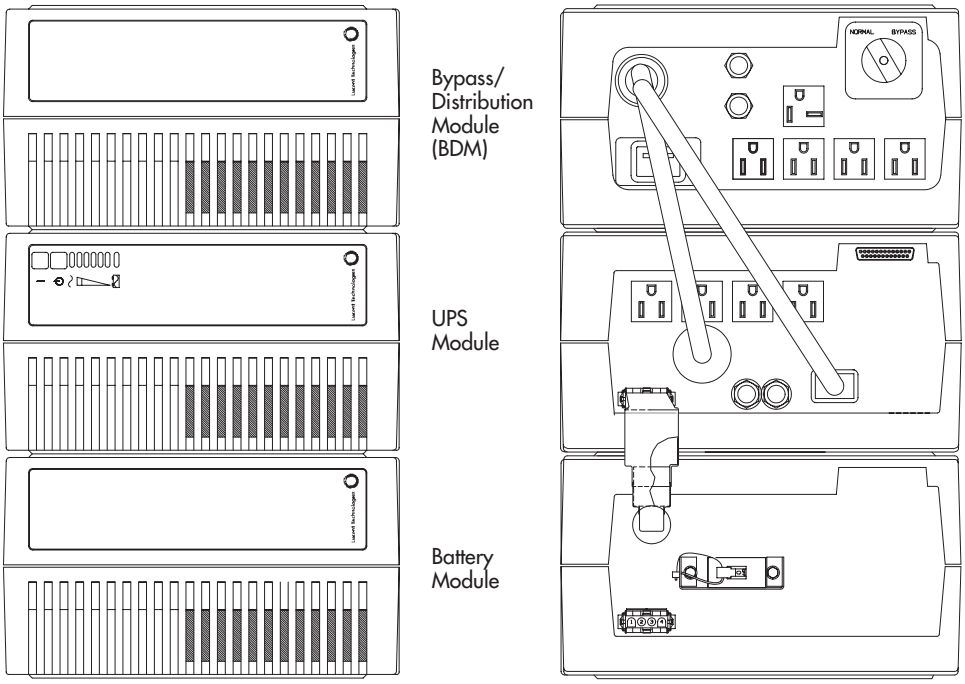


UPS with BDM Installation

1



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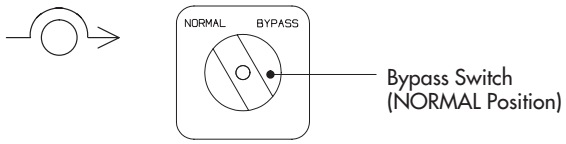

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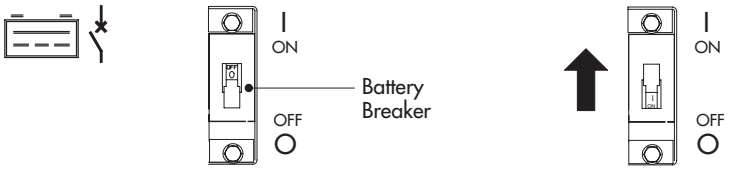

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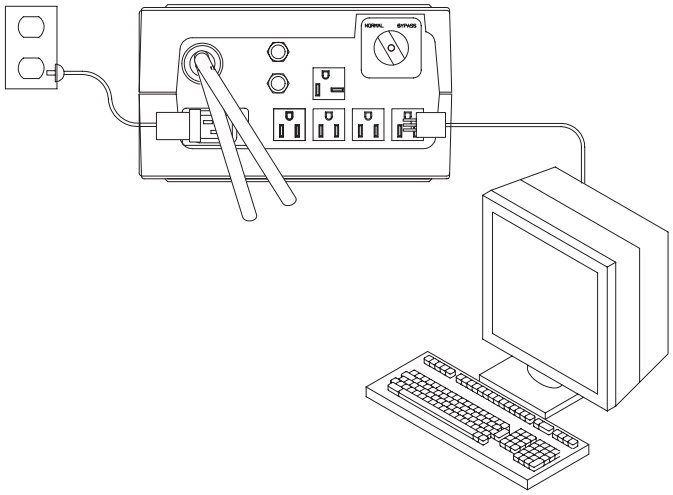

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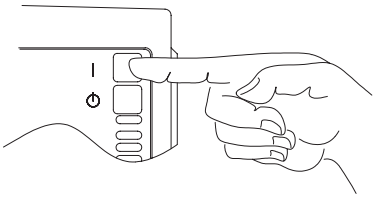

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INTRODUCTION

CHAPTER 1

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.

The Model 2000 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 optional Bypass/Distribution Module (BDM) has a Maintenance Bypass feature that supplies power to your equipment even when the UPS electronics are removed for maintenance or upgrades. Figure 1 shows the UPS.

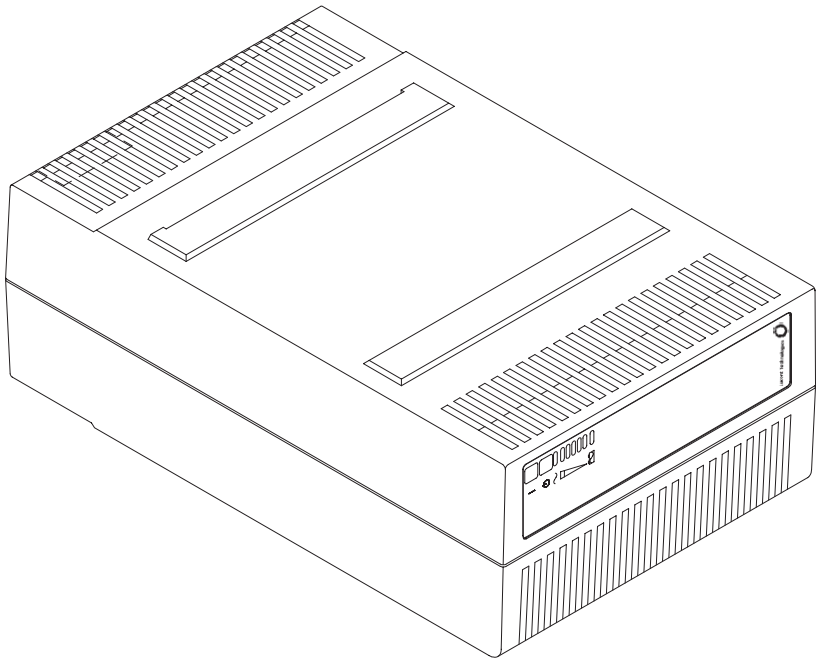


Figure 1. UPS

UPS Model and Battery Configurations

This UPS is designed to work with single-phase, three-wire, AC power sources. There are two important considerations when selecting the UPS model and battery configuration to properly safeguard your equipment:

- Load requirements
- Battery times

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 load in volt-amperes (VA). The total load VA should not exceed the UPS VA 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.
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 computing 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).

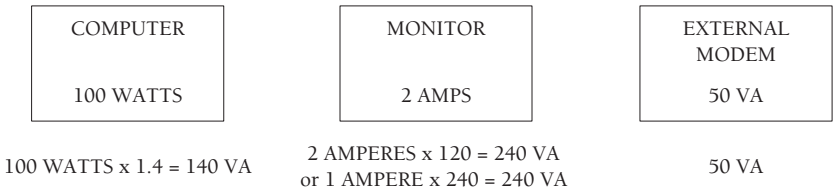


Figure 2. Volt-Amperes Calculation Example

If the total load requirements of the equipment exceeds the capacity of the UPS, you must either reduce the 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.

Battery Times

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 processing activities.

Load (VA) at .7 PF*	Load (W)	Model 2000 with Battery Module Configurations (Average Battery Time in Minutes)								
		Internal UPS Battery	1/2 Module	1 Module	1 1/2 Modules	2 Modules	2 1/2 Modules	3 Modules	3 1/2 Modules	4 Modules
200	140	72	150	228	306	384	463	542	620	700
400	280	34	74	122	166	209	251	294	337	380
600	420	22	47	78	113	145	175	204	235	265
800	560	15	33	56	81	107	135	157	179	203
1000	700	12	25	43	61	82	103	125	144	162
1250	900	9	19	32	47	61	77	95	112	130
1500	1000	7	15	25	37	49	61	74	88	102
2000	1300	4	10	17	24	32	41	50	59	69

*Typical Power Factor (PF)

SAFETY WARNINGS

CHAPTER 2

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 *Use only the power supply cord provided with this UPS. The power cord is wired in accordance with National Electrical Code (NEC) specifications. Be sure the wall outlet to be used with the UPS is wired in accordance with these same specifications in order to avoid damage to your equipment. Be sure that overcurrent protection for the AC outlet is provided at the time of installation. Be sure the input plug is completely inserted into the wall outlet. Use a single-phase, three-wire, grounded AC outlet only.*

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 *To comply with international standards and wiring regulations, the total equipment connected to the output of this UPS must not have an earth leakage current greater than 2.75 milliamperes.*

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.*

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 stromførende spænding, når UPS'en ikke er forbundet med en vekselstrømsforsyning.*

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: *Brug kun det el-kabel, der kom sammen med UPS'en. El-kablet er trådviklet ifølge specifikationerne i den internationale elektricitetslov (IEC). For at undgå beskadigelse af Deres udstyr, bør De kontroller, at stikkontakten, hvor UPS'en skal tilkobles, også er trådført ifølge disse specifikationer. Kontroller at vekselstrømskontakten er forsynet med overstrømsbeskyttelse under installeringen. Kontroller at tilf rselsstikket er sat helt ind i stikkontakten. Brug kun en enkelt fase, treøledning, jordbundet vekselstrømskontakt.*

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: *For at overholde internationale standard- og trådføringsreguleringer, må udstyret, der er tilkoblet ydelsen af denne UPS, ikke have afledningsstrøm til jord på mere end 2,75 milliamperer.*

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 output ON (tændt) knap (|), uanset om tilgangsledningen er frakoblet.*

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: *Uitsluitend het elektriciteitssnoer gebruiken dat bij deze UPS wordt geleverd. Het snoer is volgens de specificaties van de IEC (International Electrical Code) bedraad. Controleer of wandcontactdoos waarop de UPS wordt aangesloten, volgens deze zelfde specificaties is bedraad teneindeschade aan uw apparatuur te voorkomen. Controleer of er tijdens de installatie overstroombeveiliging voor het wisselstroom stopcontact wordt geleverd. Controleer of de voedingsstekker goed in het stopcontact is gestoken. Gebruik uitsluitend een enkelfasig geaard wisselstroom stopcontact met randaarde.*

Opgelet: *Teneinde de kans op brand of elektrische schok te verminderendient deze UPS in een gebouw met temperatuur- en vochtigheidregeling 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: *Om aan de internationale normen en bedradingsvoorschriften te voldoen mag de gehele apparatuur die op de uitgang van deze UPS is aangesloten, geen aardlekstroom van meer dan 2,75 milliampère 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 (|) wordt ingedrukt, ongeacht de aanwezigheid van de voeding.*

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

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

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

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

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

Varo: *Käytä vain tämän UPS-laitteen mukana toimitettua virtakaapelia. Varmista, että UPS-laitteen kanssa käytetty pistorasia on johdotettu näiden samojen määritysten mukaisesti, jotta laite ei vahingoittuisi. Varmista myös, että asennuksen yhteydessä pistorasia varustetaan ylivirtasuojauksella. Työnnä kosketin kokonaan pistorasiaan. Käytä pelkästään yksivaiheista, kolmijohtoista maadoitettua vaihtovirtarasiaa.*

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: *Kansainväliset normit ja johdotusmääräykset vaativat, että kaikkien tämän UPS-laitteen ulostulokytkentöjen yhteinen maavuotovirta ei ylitä 2,75 milliampeeria.*

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 pitkähköksi ajaksi.*

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

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 AGRÉE. 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! *Utiliser uniquement le cordon électrique fourni avec l'UPS. Ce cordon est câblé conformément aux spécifications du Code électrique international (IEC). S'assurer que le câblage de la prise de courant murale devant être utilisée avec l'UPS est également conforme à ces mêmes spécifications afin d'éviter tout endommagement du matériel. S'assurer que la prise de courant secteur est protégée contre les surcharges au moment de l'installation. S'assurer que la prise d'entrée est enfoncée à fond dans la prise murale. Utiliser uniquement une prise secteur à trois fils, monophasée et mise à la terre.*

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! *Afin d'être conforme aux normes et règlements internationaux de câblage, le courant de fuite à la terre de la totalité du matériel connecté à la sortie de cet UPS ne doit pas dépasser 2,75 milliampères.*

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.*

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! *Nur das Netzkabel verwenden, das dieser USV beiliegt. Dieses Kabel ist gemäß den Spezifikationen des International Electrical Code (IEC) verdrahtet. Sicherstellen, daß die Wandsteckdose, die für die USV verwendet wird, gemäß den selben Spezifikationen verdrahtet ist, um eine eschädigung der Geräte zu vermeiden. Sicherstellen, daß bei Installation ein Überstromschutz für die Wechselstromsteckdose vorhanden ist. Sicherstellen, daß der Eingangsstecker vollständig in die Wandsteckdose*

eingesteckt wurde. Nur eine einphasige, geerdete Dreileiter-Wechselstromsteckdose verwenden.

Vorsicht! *Um die Brand- oder Elektroschockgefahr zu verringern, diese USV nur in Gebäuden mit kontrollierter Temperatur und Luftfeuchtigkeit installieren, in denen keine leitenden Schmutzstoffen 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! *Um internationale Normen und Verdrahtungsvorschriften zu erfüllen, dürfen die an den Ausgang dieser USV angeschlossenen Geräte zusammen einen Erdschlußstrom von insgesamt 2,75 Milliampere nicht überschreiten.*

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.*

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: *usare esclusivamente il cavo di alimentazione in dotazione con il gruppo statico di continuità. Il cavo di alimentazione è cablato in conformità con le specifiche del Codice Elettrico Internazionale (IEC). Assicurarsi che la presa a muro nella quale si deve inserire il gruppo statico di continuità sia cablata in conformità con le medesime specifiche onde evitare di danneggiare l'apparecchiatura. Accertarsi che al momento dell'installazione la presa a corrente alternata sia protetta contro le sovracorrenti. Assicurarsi che la spina di ingresso sia completamente inserita nella presa a muro. Usare esclusivamente una presa a corrente alternata monofase, a tre fili, collegata a terra.*

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. 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 disattiverebbe il collegamento a terra di sicurezza del gruppo statico di continuità e dell'apparecchiatura ad esso collegata.*

Attenzione: *per conformità con gli standard internazionali e con le norme in merito al cablaggio, tutta l'apparecchiatura collegata con l'uscita del gruppo statico di continuità non deve avere una corrente di dispersione di terra superiore a 2,75 milliampere.*

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.*

Viktig Sikkerhetsinformasion

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: *Bruk kun den strømforsyningskabelen som følger med denne UPS'en. Strømkabelen er koblet i overensstemmelse med spesifikasjonene i IECs (International Electrical Code) bestemmelser. Sjekk at stikkontakten som anvendes for UPS'en er koblet i overensstemmelsen med de samme spesifikasjonene for å unngå skade på utstyr. Sjekk også at det finnes overstrømvern for vekselstrømkontakten under installeringen. Sjekk at støpselet er ført helt inn i stikkontakten. Bruk kun en en-faset, tre-trådet, jordet vekselstrømkontakt.*

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: *Alt utstyr som er forbundet med utgangen av denne UPS'en må ikke ha en sterkere total lekkasjestrøm enn 2,75 milliampere for å være i overensstemmelse med internasjonale standarder og forkablingsbestemmelser.*

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 (|) trykkes, uavhengig av strømforsyningen.*

Regulamentos de Segurança

Instruções De Sergurança 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.*

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: *Utilize somente o cabo de alimentação elétrica fornecido com o UPS. Este cabo foi manufaturado de acordo com as especificações do IEC (International Electrical Code). Certifique-se de que a tomada de parede foi montada de acordo com estas mesmas especificações a fim de evitar damos ao seu equipamento. Na hora da instalação, certifque-se de que foi fornecida uma proteçã o contra sobrecarga de circuito para a tomada de corrente alternada. Certifique-se de que o plugue de entrada esteja completamente inserido na tomada de parede. Utilize somente uma tomada de corrente alternada aterrada, trifilar, monofácica.*

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 opero-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: *Para estar de acordo com os padrões internacionais e regulamentos de fiação, o equipamento total conectado à saída deste UPS não deve ter uma corrente de fuga à terra maior que 2,75 miliampéres.*

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 perído de tempo.*

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

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: *Utilice solamente el cable de suministro de alimentación provisto con este UPS puesto que está cableado de acuerdo con las especificaciones del IEC (Código Eléctrico Internacional). Asegúrese de que el tomacorriente en la pared a utilizarse con este UPS está cableado en virtud de las especificaciones mencionadas para evitar así daños a su equipo. Asegúrese de que en el momento de efectuarse la instalación, el tomacorriente de CA haya recibido protección contra exceso de corriente. Asegúrese de que el enchufe de entrada está totalmente insertado en el tomacorriente en la pared. Utilice solamente un tomacorriente de CA, fase única, tres hilos y con descarga a tierra.*

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: *Para cumplir con los estándares internacionales y con las disposiciones sobre cableado, la totalidad del equipo conectado a la salida de este UPS no debe tener una corriente de fuga a tierra superior a los 2,75 miliamperes.*

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 aisla 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.*

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 kontakterna 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: *Använd endast den kabel som medföljer denna UPS-enhet. Kabeln är lindad enligt IEC-specifikationerna (International Electrical Code). Kontrollera att det vägguttag som ska användas med UPS-enheten är draget enligt samma specifikationer, så att skada på utrustningen undviks. Kontrollera att det finns överspänningsskydd för väDxelströmsuttaget vid installationstillfället. Kontrollera att UPS-kontakten är helt*

inskjuten i vägguttaget. Använd endast ett enfasigt, jordat växelströmsuttag med tre ledare.

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: *För att överensstämma med internationell standard och dragningsföreskrifter får inte den totala utrustning som anslutits till uttaget på denna UPS-enhet ha jordslutningsström som överstiger 2,75 milliampere.*

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 frånkopplas.*

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

INSTALLATION

CHAPTER 3

The following section describes the UPS package and its contents, UPS storage requirements, and the installation and startup of the UPS.

Unpacking and Inspection

Carefully unpack the UPS and optional 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 UPS 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 circuit breaker on all battery modules is returned to the OFF (O) position (see Figure 4 on page 22).

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 in the table 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 37 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. This configuration does not have serial output.

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

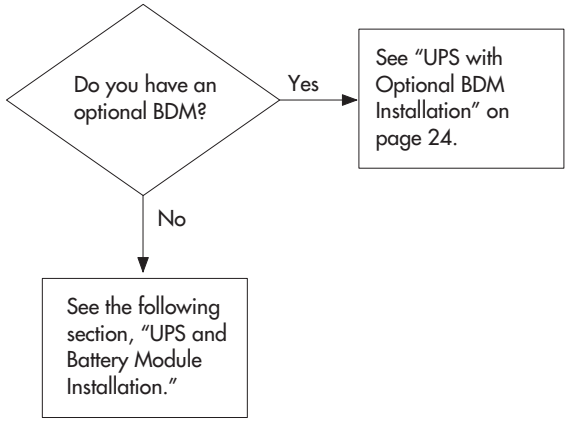
Systems That Require a Serial Interface

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.

Selecting an Installation Option

In addition to the Model 2000 UPS module, the unit has optional battery modules and an optional Bypass/Distribution Module. Use the following flow chart to decide which installation option is right for you.



UPS and Battery Module Installation

Use the following procedure to install the UPS and optional battery modules:

1 Place the UPS near the equipment to be protected. Make sure the UPS is well ventilated and away from direct sunlight or other heat source.

Steps 2 through 7 are for battery installation. If you do not have optional battery modules, skip to Step 8 on page 22.

You can install additional battery modules while the UPS is operating, but make sure the UPS is not in Battery Mode (see page 31).

2 Place the battery modules underneath or beside the UPS as shown in Figure 3. If earthquake bracing is required, the UPS must be positioned vertically (see Chapter 8, "Seismic Installation" on page 51).

NOTE *For stacked modules, do not place more than three battery modules in one stack. The UPS module must be placed on top of the battery modules.*

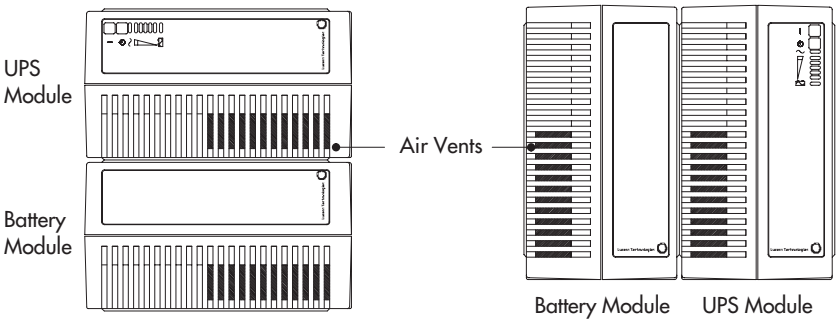


Figure 3. Module Setup

3 Make sure the circuit breaker on all battery modules is in the OFF (O) position (see Figure 4).

4 Plug the battery output connector on the battery cord into the external battery connector on the UPS. All battery connectors are polarized to prevent incorrect connection.

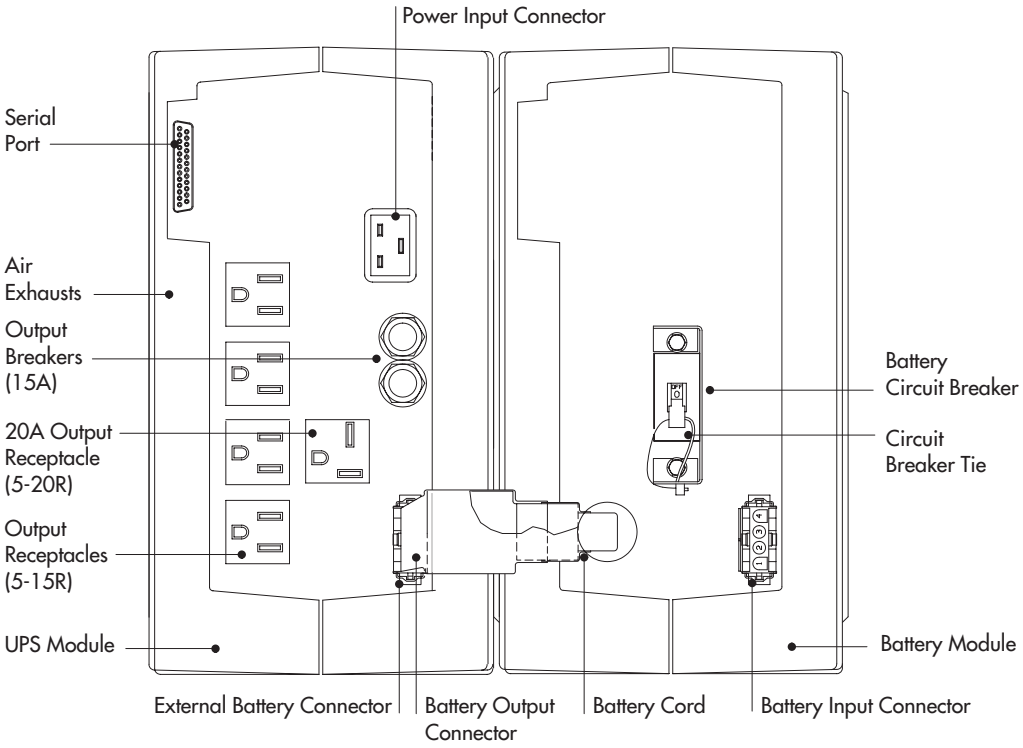


Figure 4. UPS Rear Panel

5 If additional battery modules are to be used, plug the battery cord of the second module into the battery input connector of the first battery module. Follow this procedure for each additional battery module.

6 Remove the circuit breaker tie or clamp from the circuit breaker on all battery modules.

7 Turn the circuit breaker on all battery modules to the ON (|) position.

8 Make sure the equipment to be protected by the UPS is powered off. Then plug the equipment into the power output receptacles on the UPS rear panel.

9 Start the UPS according to the following "UPS Startup" procedure.

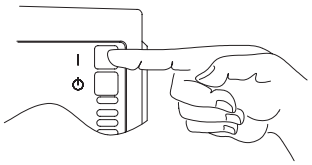
UPS Startup

To start up the UPS:

1. Turn on the equipment that is connected to the UPS.
2. Plug the UPS power supply cord into the input connector on the UPS rear panel.
3. Plug the other end of the UPS power supply cord (NEMA 5-20P) into a grounded, three-wire, AC receptacle that has been wired in accordance with NEC or IEC specifications.

   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.

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



   The ~ Indicator remains lit and the Output On 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 30 for more information.

UPS with Optional BDM Installation

The BDM has a Maintenance Bypass feature that supplies power to your equipment even when the UPS electronics are removed for maintenance or upgrades. Use the following procedure to install the UPS with a BDM:

1. Place the UPS near the equipment to be protected. Make sure the UPS is well ventilated and away from direct sunlight or other heat source.

2. Place the BDM on top of or beside the UPS and battery cabinets as shown in Figure 5. If earthquake bracing is required, the UPS must be positioned vertically (see Chapter 8, "Seismic Installation" on page 51).

   Steps 3 through 7 are for battery installation. If you do not have optional battery modules, skip to Step 8 on page 26.

   You can install additional battery modules while the UPS is operating, but make sure the UPS is not in Battery Mode (see page 31).

NOTE *For stacked modules, do not place more than three battery modules in one stack. The UPS module must be placed on top of the battery modules.*

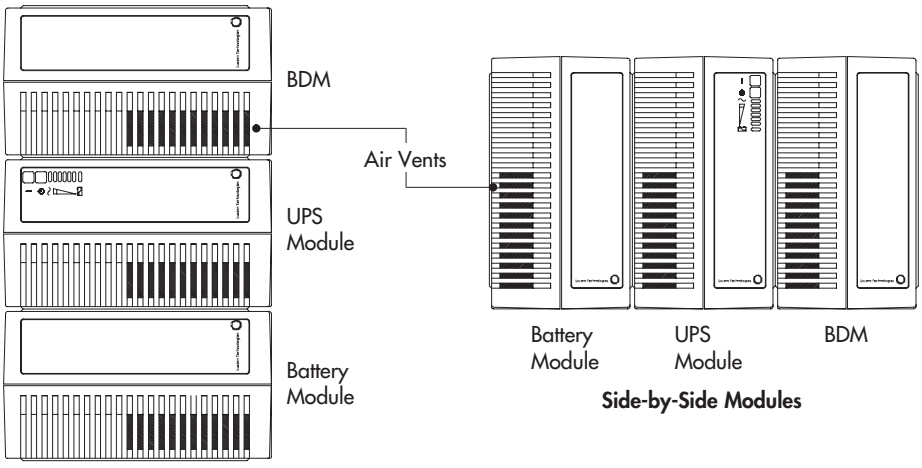


Figure 5. Module Setup with BDM

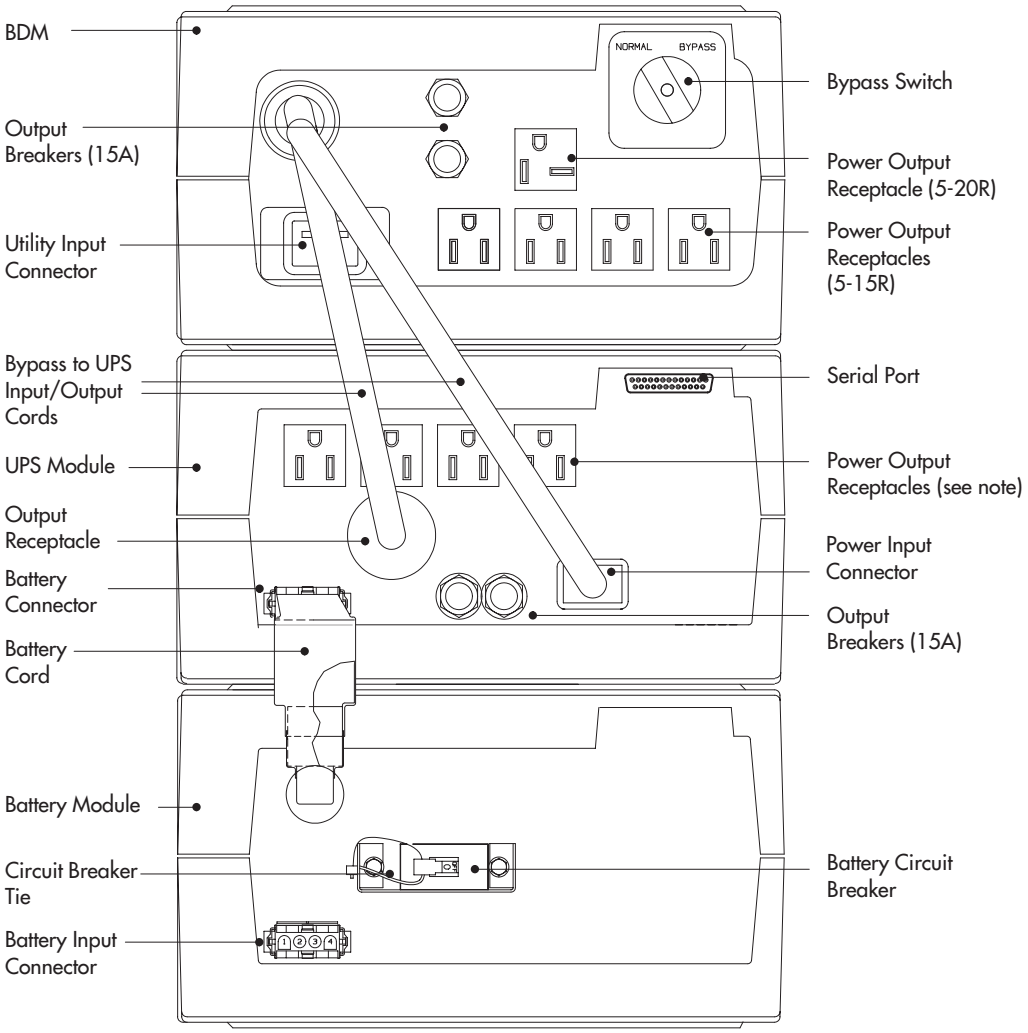


Figure 6. UPS with BDM Rear Panel

NOTE *The output receptacles on the UPS module have surge and battery backup protection, but are not powered during maintenance bypass operation.*

3 Make sure the circuit breaker on all battery modules is in the OFF (O) position (see Figure 6).

4 Plug the battery output connector on the battery cord into the external battery connector on the UPS. All battery connectors are polarized to prevent incorrect connection.

5. If additional battery modules are to be used, plug the battery cord of the second module into the battery input connector of the first battery module. Follow this procedure for each additional battery module.
6. Remove the circuit breaker tie or clamp from the circuit breaker on all battery modules.
7. Turn the circuit breaker on all battery modules to the ON (|) position.
8. Make sure the Bypass switch on the BDM rear panel is in the NORMAL position.
9. Plug the input and output cords of the BDM into the power connectors on the UPS as shown in Figure 6.
10. 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.
11. Start the UPS according to the following "UPS with Optional BDM Startup" procedure.

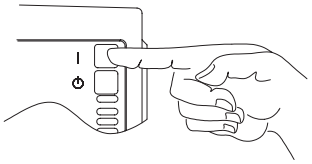
UPS with Optional BDM Startup

To start up the UPS and BDM:

1. Turn on the equipment that is connected to the UPS.
2. Turn the Bypass switch on the BDM rear panel to the NORMAL position (see Figure 6 on page 25).
3. Plug the input power cord into the utility input connector on the BDM rear panel.
4. Plug the other end of the power cord into a grounded, three-wire, AC receptacle that has been wired in accordance with NEC or IEC specifications.

   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.

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



The ~ Indicator remains lit and the Output On 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 30 for more information.

Troubleshooting Tips

If you should encounter any problems during startup, see the troubleshooting chart on page 47.

The UPS is shipped with the battery 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, the UPS may need to operate for approximately 8 hours before the battery is fully charged and full battery-backup time is available. If the I3 Indicator flashes, operate the UPS for 24 hours to fully charge the battery.

UPS OPERATION

CHAPTER 4

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 38 for information.

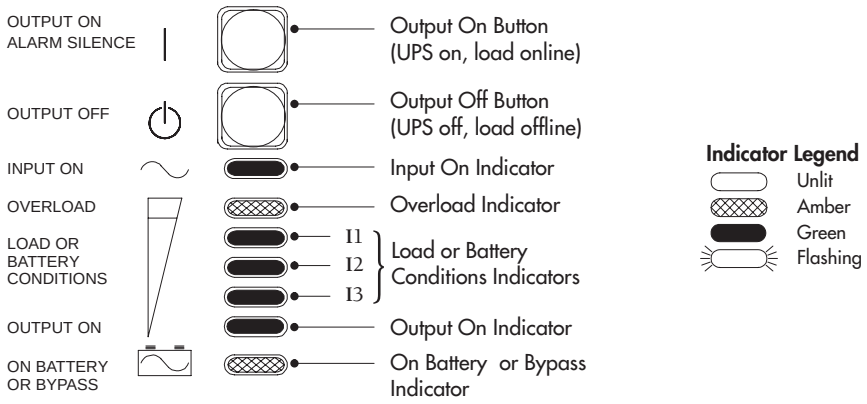


Figure 7. UPS Front Panel

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 8). While power is applied to the UPS, the maintenance-free battery is automatically kept in a fully-charged condition.

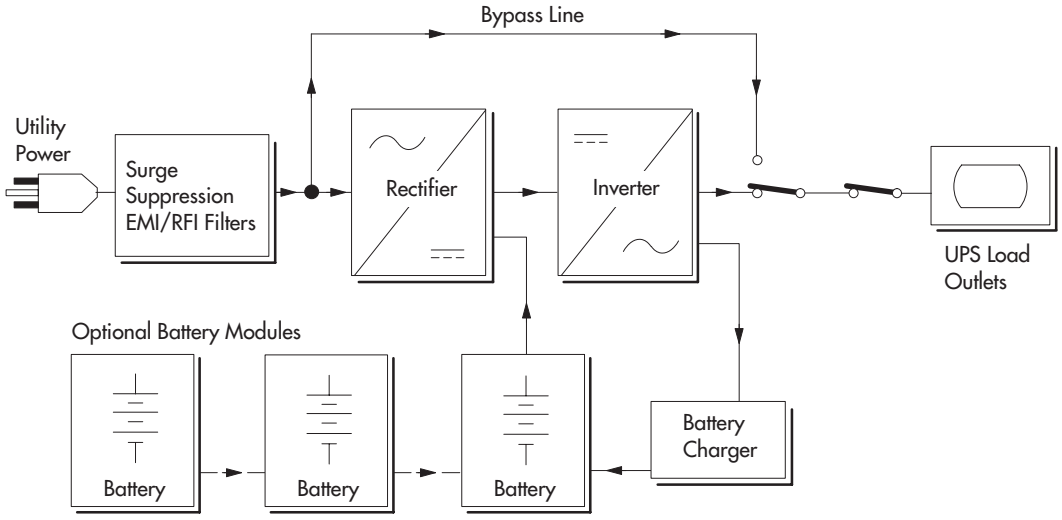


Figure 8. UPS Block Diagram

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 9).

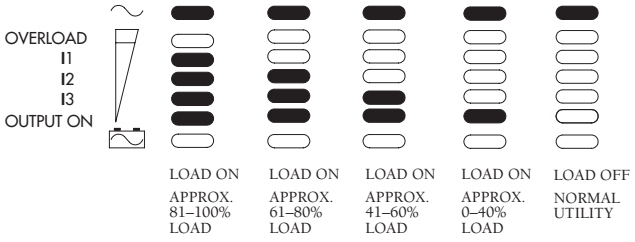


Figure 9. Normal Operation Indicators

Bypass Mode

The ~ Indicator and the ⊠ Indicator illuminate simultaneously, indicating Bypass Mode (see Figure 10). 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.

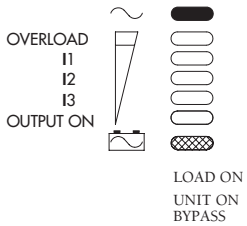


Figure 10. Bypass Operation Indicators

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 11). When the utility power returns, the UPS switches to Normal Mode operation while the battery recharges.

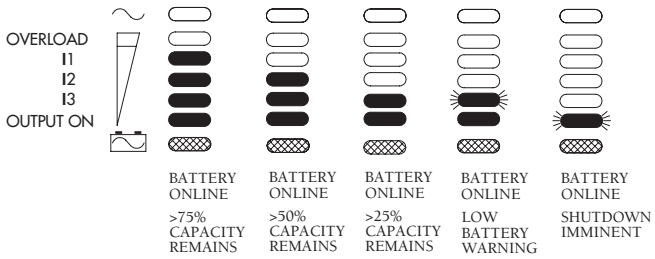


Figure 11. Battery Operation Indicators

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
- Site Fault 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 47.

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. After utility power has been unavailable for one minute, 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:

1. Press and hold the Output ⏻ Off button until the long beep ceases (approximately three seconds).

   The ~ Indicator remains lit indicating Normal Mode, load offline.

2. Unplug the UPS.

   The UPS enters Battery Mode for several seconds. The ~ Indicator turns off and the UPS shuts down.

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 your equipment. Figure 12 shows the operation of the UPS with the BDM.

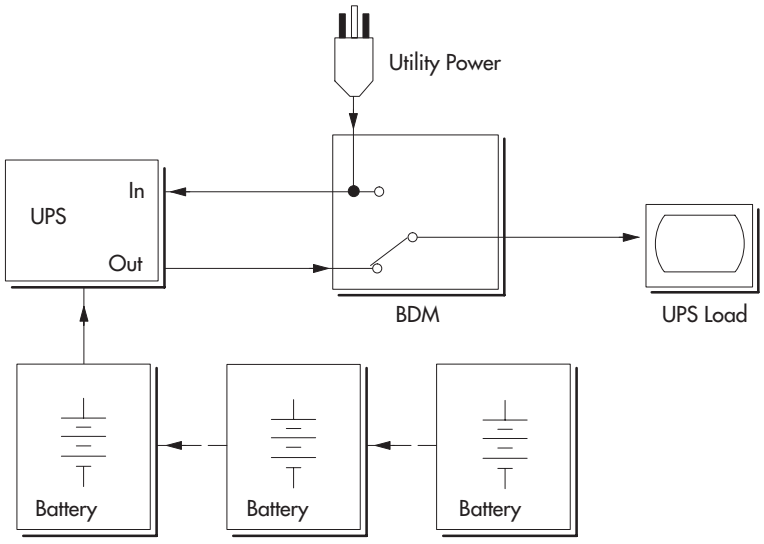


Figure 12. UPS and BDM Block Diagram (UPS Operation)

Using Maintenance Bypass

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

1. If you are using shutdown software, disconnect the DB-25 serial communications cable from the serial port on the UPS rear panel.
2. Turn the Bypass switch on the BDM to the BYPASS position (see Figure 13). The BDM is now powering your equipment from utility power.
3. Press and hold the Output ⏻ Off button until the long beep ceases (approximately three seconds). The ~ Indicator remains lit.
4. Remove the BDM input and output cords from the UPS rear panel.

CAUTION *Do not remove the input power cord or your equipment from the BDM.*

5. Turn the circuit breaker on all battery modules to the OFF (O) position.
6. Disconnect the battery connector on the UPS rear panel.
7. Remove the UPS.

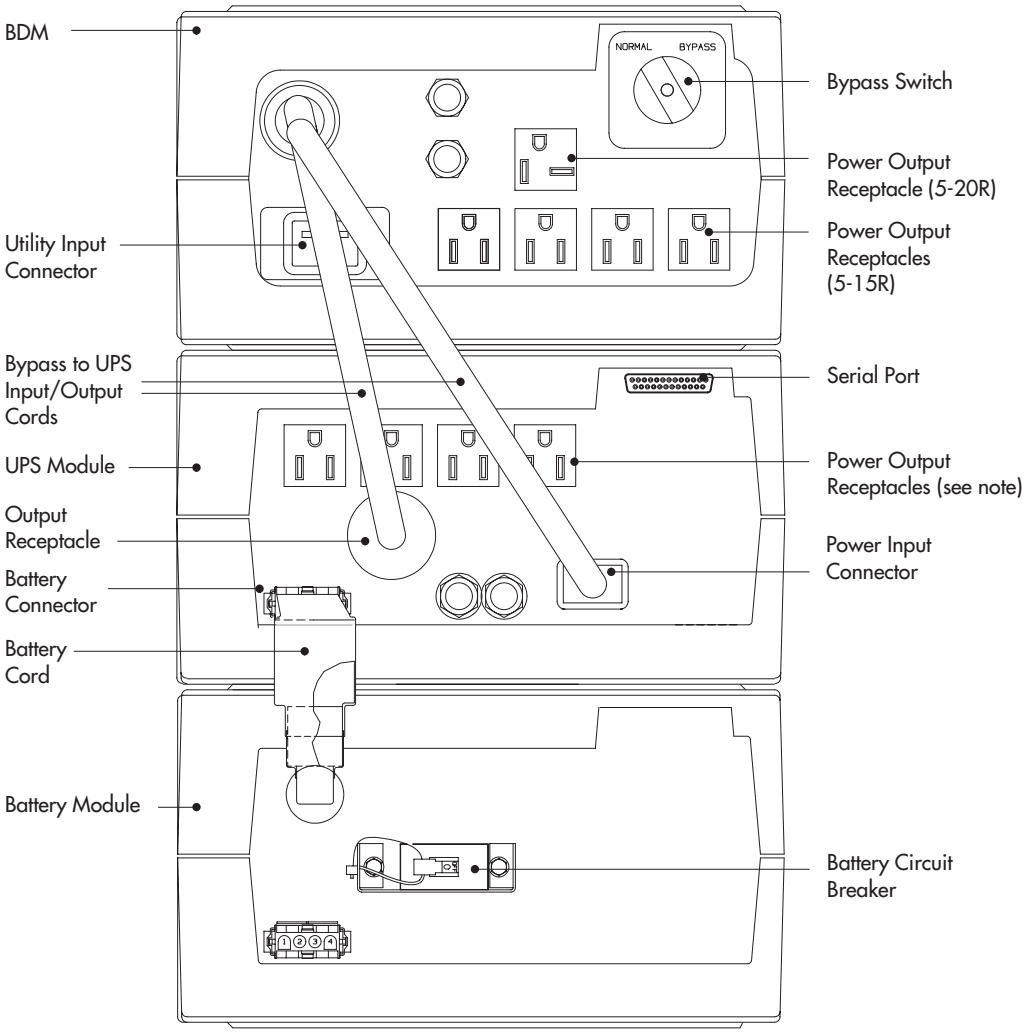


Figure 13. UPS with BDM Rear Panel

NOTE *The output receptacles on the UPS module have surge and battery backup protection, but are not powered during maintenance bypass operation.*

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

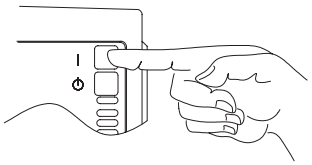
1 Reconnect the battery module(s) to the battery connector on the UPS rear panel.

2 Turn the circuit breaker on all battery modules to the ON (|) position.

3 Plug the input and output cords of the BDM into the power connectors on the UPS as shown in Figure 13.

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

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



The ~ Indicator remains lit and the Output On Indicator turns on, indicating the UPS is online.

5 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. The UPS is now in Normal Mode with the load online.

6 Reconnect the DB-25 serial communications cable on the UPS rear panel.

7 If you are using power management software, make sure you restart the software and verify communication with the UPS.

COMMUNICATION

CHAPTER 5

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 Communication 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 39).

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 39).*

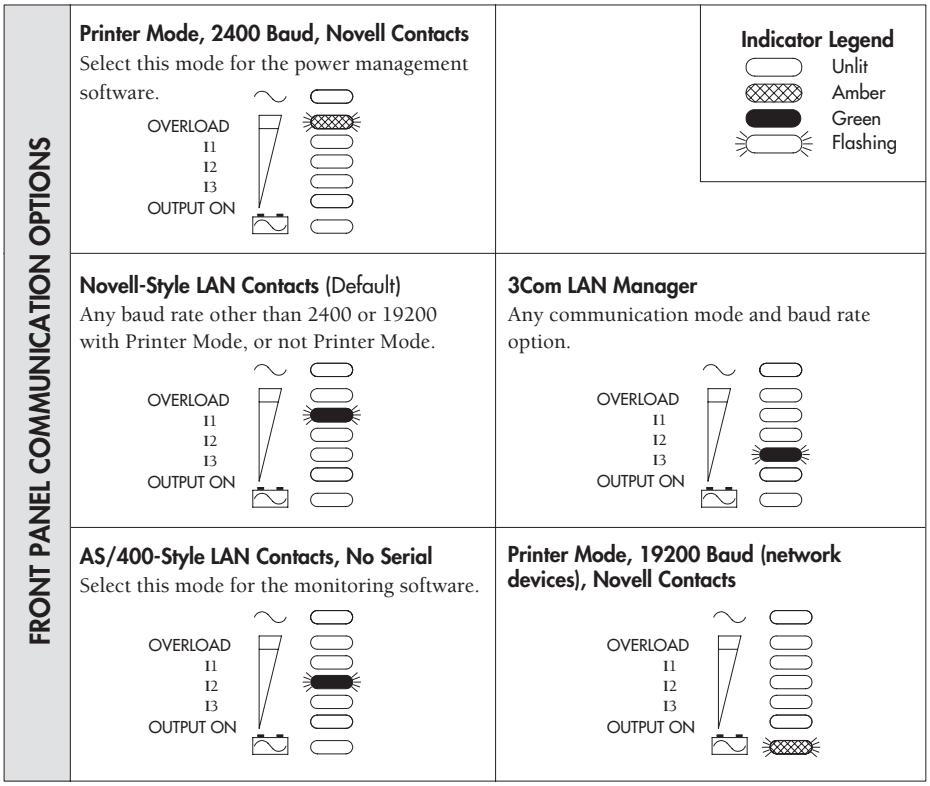


Figure 14. Front Panel Communication Options

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).

   Unplug the UPS. Wait until all indicators turn off and then continue to the next step.

2. Plug in the UPS 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 *If you do not save a selection within two minutes, the setup automatically aborts and switches back to 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 #              03.05
COMM mode:             Ser_Print
Baud x100:             024
LAN mode:              Novell
Site Fault Detection:  Enabled

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. Do not apply any negative voltage to these 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 15 for the location of the serial port.

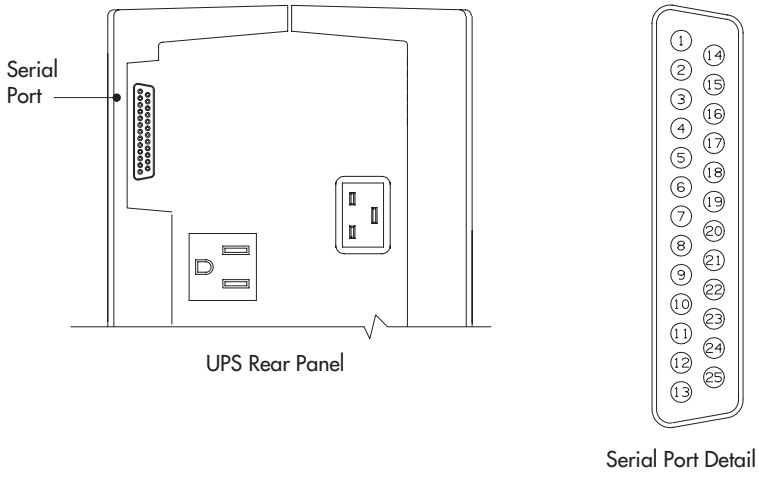


Figure 15. Serial Port Location

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.*

SPECIFICATIONS

CHAPTER 6

UPS Technical Specifications

Model/Rating	2000EXT/2000 VA, 1300W
Input Current	14.9A
Output Current	16A
Typical Heat Loss	229W
Input Voltage Range	85 to 144 Vac @ full load 75 to 144 Vac @ half load 65 to 144 Vac @ light load
Input Power Factor	0.95 Typical
Frequency Range	45-65 Hz
Surge Protection	Meets IEEE 587/ANSI C62.41 Category A and B
Output Wave Form	Sine wave
Output Voltage	120 Vac ±3%
Common Mode Noise Rejection	>60 dB @ 100 kHz
Transverse Mode Noise Rejection	>80 dB @ 100 kHz
Audible Noise Normal Mode	45 dBA @ 1m
Input Cord	Detachable 2-meter cord with 5-20P
Outlets	UPS Module: 5-15R (4), 5-20R (1) Optional BDM: 5-15R (4), 5-20R (1)
Batteries	12 Vdc, 5 Ah, maintenance-free rechargeable lead acid
Operating Environment	Temperature: 10°C to 40°C (50°F to 104°F) Humidity: 5 to 95% (noncondensing)
Agency Approvals	Safety: UL 1778 cUL EMC: FCC Part 15 Class A

UPS Physical Specifications

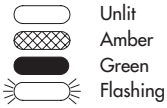
Parameter	Standard EXT Unit with Battery	Expanded Battery Module	Standard EXT Unit with Battery
Height	252 mm (9.91 in)	252 mm (9.91 in)	252 mm (9.91 in)
Width	142.5 mm (5.61 in)	142.5 mm (5.61 in)	142.5 mm (5.61 in)
Depth	400 mm (15.75 in)	400 mm (15.75 in)	400 mm (15.75 in)
Weight	16.33 kg (36 lb)	EBC60-1 Battery: 12.25 kg (27 lb) EBC60-2 Battery: 22 kg (48.5 lb)	3.8 kg (8.3 lb)

TROUBLESHOOTING

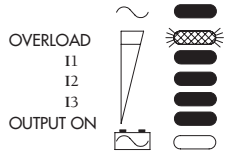
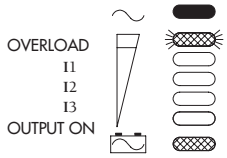
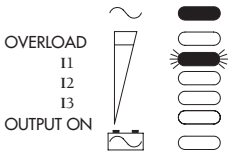
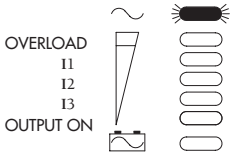
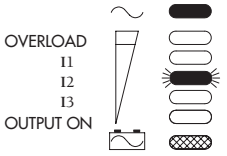
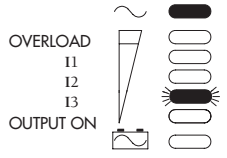
CHAPTER 7

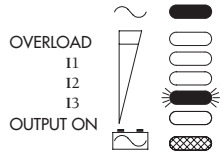
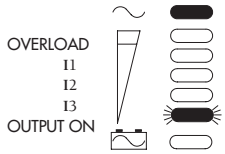
The UPS is designed for durable, automatic operation and also alerts you whenever potential operating problems may occur. Use the following troubleshooting chart to determine the UPS alarm condition.

Indicator Legend



Condition	Possible Cause	Action
UPS does not turn on.	UPS is not plugged in.	Plug UPS into working outlet.
	Dead wall socket.	Test wall socket, repair as required.
	UPS circuit breaker is tripped.	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.
UPS circuit breaker trips.	Load fault.	Check the load. Disconnect faulty load equipment. Wait several minutes before resetting the UPS circuit breaker. Restart the load.
Indicator remains lit, even though line voltage is present.	Utility line is out of specification.	Test wall socket, repair as required.
	UPS circuit breaker is tripped.	Reduce load, then reset breaker.
UPS does not provide the expected backup time.	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 43).
	Incorrect baud rate.	Select a new baud rate (see page 42).
	Incorrect communication mode.	Select a new communication mode (see Chapter 5).

Condition	Possible Cause	Action
	Power requirements exceed UPS capacity. If overload is greater than 105%, the alarm beeps every second and the UPS may switch to Bypass Mode.	Your UPS continues to operate. Reduce load.
	The UPS switched to Bypass Mode because the overload increased (above 105%). The alarm beeps.	Reduce load. If the Overload Indicator remains lit, reset the UPS by pressing the Output | On button until the alarm beeps. You may need to obtain a larger capacity UPS.
	Building wiring is out of specification. The UPS checks the utility power source during startup for reversed neutral and line conductors. The alarm beeps.	Have site wiring tested. Repair as required.
	The utility line voltage and frequency are out of specification.	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 45).
	UPS internal temperature is too high. The alarm beeps 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.
	Weak battery while in Normal Mode. The alarm beeps.	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
	Weak battery while in Bypass Mode.	This usually indicates that the batteries need replacing or the UPS requires service. Contact your service representative.
	Self Test failure. UPS internal problem.	The UPS may switch to Bypass Mode, depending on the circumstances. Reset the UPS by pressing the Output | On button until the alarm beeps. Contact your service representative if condition persists.

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.

Obtaining Service

The troubleshooting chart on page 47 covers most of the difficulties you may encounter during normal operations. If you have any questions or problems with the 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

UPS Product Model	Lucent Technologies Price Element Code	Lucent Technologies Comcode
Contact Closure Alarm Interface	24433	407274133
	120V	120V
2000 VA EXT	2403-420	407780204
Battery Half Module	24430	407195403
Battery Full Module	24431	407195411
BDM	24439	407465921

SEISMIC INSTALLATION

CHAPTER 8

The following section describes how to install the stacking module for stability or seismic installations.

Use the following procedure to install the stacking module:

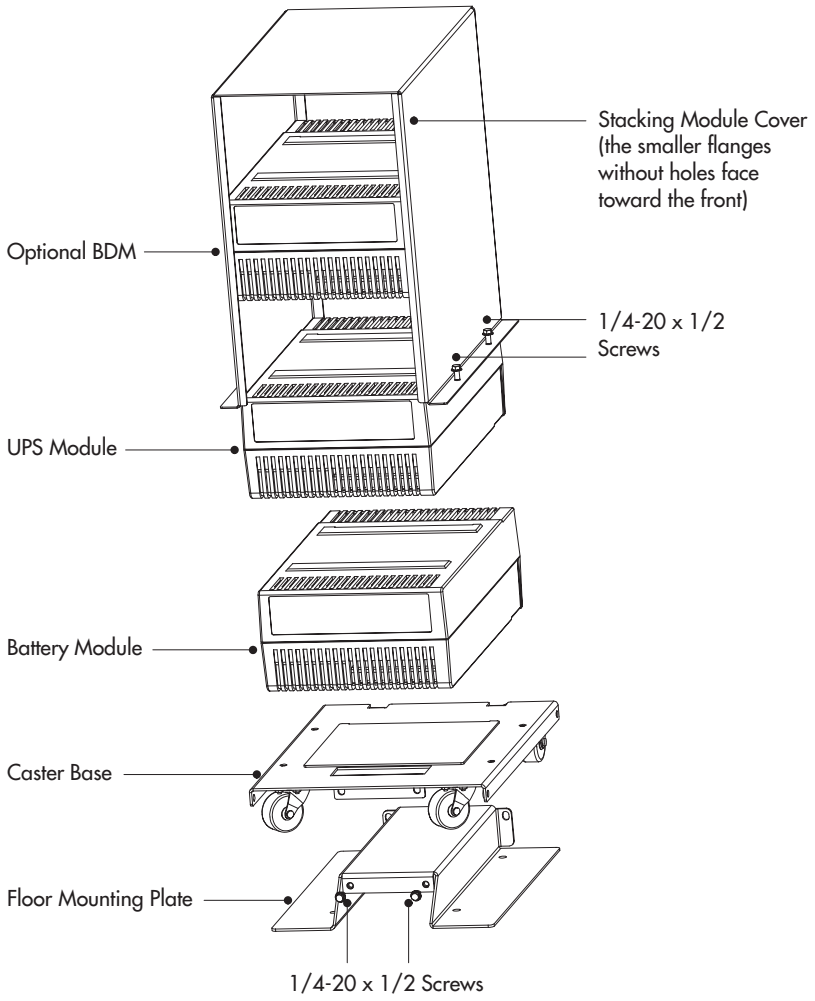


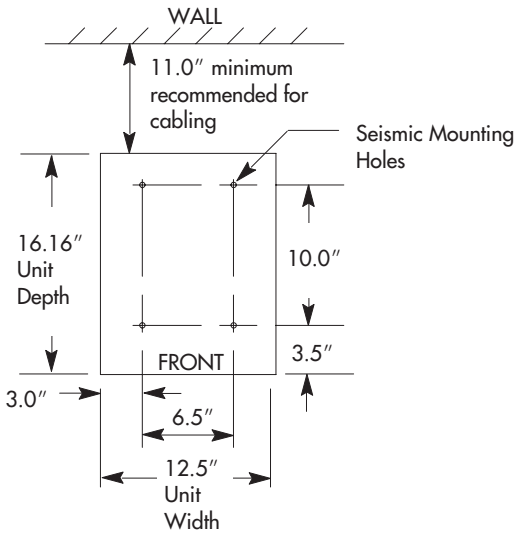
Figure 16. Stacking Module

1 Place the UPS near the equipment to be protected. Make sure the UPS is well ventilated and away from direct sunlight or other heat source.

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 16 for part locations.

3 Stack the modules onto the caster base according to the stacking order shown in Figure 16.

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 Follow the installation instructions on page 21 for connecting the UPS and battery modules. If you have a BDM, follow the instructions on page 24 for installing the UPS with an optional BDM.

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