

Powerware Series

Eaton® PowerPass® Distribution Module User's Guide

For use with Eaton 9130 UPS
(2500/3000 VA) Models



Class A EMC Statements

FCC Part 15

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 harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES-003

This Class A Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

EN 50091-2

Some configurations are classified under EN 50091-2 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.

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Requesting a Declaration of Conformity

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

- Harmonized Standards: EN 50091-1-1 and EN 50091-2; IEC 60950 Third Edition
- 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:

Eaton Power Quality Oy
Koskelontie 13
FIN-02920 Espoo
Finland
Phone: +358-9-452 661
Fax: +358-9-452 665 68

Special Symbols

The following are examples of symbols used on the UPS or accessories to alert you to important information:



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, such as important operating and maintenance instructions.



This symbol indicates that you should not discard the UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.



This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

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Chapter 1 Introduction

The PowerPass® Distribution Module (PDM) is designed to operate with a 2500/3000 VA Eaton 9130 uninterruptible power system (UPS) and allows you to:

- Replace or upgrade the UPS without losing power to your equipment (see “Using Maintenance Bypass” on page 27).
- Provide surge protection if the UPS is not present.
- Provide extra surge protection when the UPS is present.

Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.



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.



WARNING

- 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% maximum).
- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

Sikkerhedsanvisninger

VIGTIGE SIKKERHEDSANVISNINGER GEM DISSE ANVISNINGER

Denne manual indeholder vigtige instruktioner, som skal følges under installation og vedligeholdelse af UPS'en og batterierne. Læs venligst alle instruktioner inden betjening af udstyret og gem denne manual mhp. fremtidige opslag.



FARE

Denne UPS indeholder LIVSFARLIG HØJSPÆNDING. Alle reparationer og vedligeholdelse bør kun udføres af en AUTORISERET SERVICETEKNIKER. Ingen af UPS'ens indvendige dele kan repareres af brugeren.



ADVARSEL!

- Installér denne UPS i et temperatur- og fugtighedskontrolleret indendørsmiljø, frit for ledende forureningsstoffer for at formindske risikoen for brand og elektrisk stød. Rumtemperaturen må ikke overstige 40°C. UPS'en bør ikke betjenes nær vand eller høj fugtighed (maksimalt 95%).
- For PDM systemer med hårdledningsudgange, skal overstrømsbeskyttelse for vekslestrømmens udgangskredsløb forsynes af andre.
- For PDM systemer med hårdledningsudgange, skal egnede, nominelle afbryderkontakter for vekslestrømmens udgangskredsløb forsynes af andre.

Belangrijke Veiligheidsinstructies

BELANGRIJKE VEILIGHEIDSINSTRUCTIES BEWAAR DEZE INSTRUCTIES

Deze handleiding bevat belangrijke instructies die u dient te volgen tijdens de installatie en het onderhoud van de UPS en de accu's. Lees alle instructies voordat u de apparatuur in bedrijf neemt en bewaar deze handleiding als naslagwerk.



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 GEREPEEREED.



WAARSCHUWING

- 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 niet overschrijden. Niet gebruiken in de buurt van water of bij zeer hoge vochtigheid (max. 95%).
- Voor PDM systemen met vast-bedrade uitgangen, moet de overstroombeveiliging voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.
- Voor PDM systemen met vast-bedrade uitgangen, moeten de juiste hoofdschakelaars voor wisselstroom uitvoercircuit(s) door anderen worden geleverd.

Tarkeita Turvaohjeita

TÄRKEITÄ TURVAOHJEITA - SUOMI SÄILYTÄ NÄMÄ OHJEET

Tämä käyttöohje sisältää tärkeitä ohjeita, joita on noudatettava UPS-virtalähteen ja akkujen asennuksen ja huollon yhteydessä. Lue kaikki ohjeet ennen laitteiston käyttöä ja säilytä ohje myöhempiä tarvetta varten.

VAARA



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

VAROITUS



- 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 ja vältä kosteita tiloja (95 % maksimi).
- PDM-järjestelmissä kiintealla asennuksella: kuormana olevien laitteiden ylivirtasuojaus ja erotuskytkimet tulee toteuttaa kuormapiireissa.

Consignes de sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance des batteries et de l'onduleur. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

DANGER!



Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIEE A UN PERSONNEL QUALIFIE AGREE. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.



AVERTISSEMENT!

- Pour réduire les risques d'incendie et de décharge électrique, installer l'onduleur uniquement à l'intérieur, dans un lieu dépourvu de matériaux conducteurs, où la température et l'humidité ambiantes sont contrôlées. La température ambiante ne doit pas dépasser 40 °C. Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % maximum).
- Pour les modèles PDM 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.
- Pour les modèles PDM 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.

Sicherheitswarnungen

WICHTIGE SICHERHEITSANWEISUNGEN AUFBEWAHREN

Dieses Handbuch enthält wichtige Anweisungen, die Sie während der Installation und Wartung des USV (Unterbrechungsfreies Stromversorgungssystem) und der Batterien befolgen müssen. Bitte lesen Sie alle Anweisungen des Handbuches bevor sie mit dem Gerät arbeiten. Bewahren Sie das Handbuch zum Nachlesen auf.



WARNUNG

Die USV führt lebensgefährliche Spannungen. Alle Reparatur- und Wartungsarbeiten sollten nur von Kundendienstfachleuten durchgeführt werden. Die USV enthält keine vom Benutzer zu wartenden Komponenten.



ACHTUNG

- 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.
- Für PDM-Systeme mit festverdrahteten Eingängen muß der Überstromschutz für die Ausgangswechselstromkreise anderweitig bereitgestellt werden.
- Für PDM-Systeme mit festverdrahteten Ausgängen müssen Trennschalter für die Ausgangswechselstromkreise mit passendem Nennwert anderweitig bereitgestellt werden.

Avvisi di sicurezza

IMPORTANTI ISTRUZIONI DI SICUREZZA CONSERVARE QUESTE ISTRUZIONI

Il presente manuale contiene importanti istruzioni da seguire durante l'installazione e la manutenzione dell'UPS e delle batterie. Leggere integralmente le istruzioni prima di utilizzare l'apparecchiatura e conservare il presente manuale per futuro riferimento.



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**.



AVVERTENZA

- 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).
- Nei sistemi PDM 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.
- Nei sistemi PDM 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

VIKTIGE SIKKERHETSINSTRUKSJONER GJEM DISSE INSTRUKSJONENE

Denne håndboken inneholder viktige instruksjoner som du bør overholde ved montering og vedlikehold av UPS-enheten og batteriene. Les alle instruksjoner før utstyret tas i bruk, og gjem håndboken til fremtidig referanse.



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.



FARLIG

- 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. Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).
- For PDM systemer med fastkoplede uttak, må overstrømværn for vekselstrømmuttak(ene) stilles til rådighet av andre.
- For PDM 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 importantes que devem ser seguidas durante a instalação e manutenção do no-break e das baterias. Leia todas as instruções antes de operar o equipamento e guarde este manual para consultá-lo futuramente.

CUIDADO



A 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 da UPS.

ADVERTÊNCIA



- Para reduzir o risco de incêndios ou choques elétricos, instale a UPS em ambiente interno com temperatura e umidade controladas e livres de contaminadores condutíveis. A temperatura ambiente não deve exceder 40°C. Não opere próximo a água ou em umidade excessiva (máx: 95%).
- Para sistemas PDM com saídas conectadas, a proteção de sobrecarga para circuitos de saída de corrente alternada deve ser fornecida por outros.
- Para sistemas PDM com saídas conectadas, interruptores de desconexão devidamente qualificados para circuitos de saída de corrente alternada devem ser fornecidos por outros.

Предупреждения по мерам безопасности

ВАЖНЫЕ УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ СОХРАНИТЕ ЭТИ УКАЗАНИЯ

В данном руководстве содержатся важные инструкции по установке и обслуживанию источника бесперебойного питания (ИБП) и батарей. Перед работой с оборудованием прочтите все инструкции. Сохраните данное руководство для дальнейшего использования.

ОПАСНО



В данном ИБП имеются **СМЕРТЕЛЬНО ОПАСНЫЕ НАПРЯЖЕНИЯ**. Все работы по ремонту и обслуживанию должны выполняться **ТОЛЬКО УПОЛНОМОЧЕННЫМ ОБСЛУЖИВАЮЩИМ ПЕРСОНАЛОМ**. Внутри ИБП нет узлов, **ОБСЛУЖИВАЕМЫХ ПОЛЬЗОВАТЕЛЕМ**.



ПРЕДУПРЕЖДЕНИЕ

- Для снижения опасности пожара или поражения электрическим током устанавливайте ИБП в закрытом помещении с контролируемыми температурой и влажностью, в котором отсутствуют проводящие загрязняющие вещества. Температура окружающего воздуха не должна превышать 40°C. Не эксплуатируйте устройство около воды или в местах с повышенной влажностью (макс. 95%).
- Для моделей ИБП с постоянно запаянными выходными контактами устройство защиты от перегрузки выходного контура (контуров) переменного тока приобретается отдельно.
- Для моделей ИБП с постоянно запаянными выходными контактами соответствующие размыкающие переключатели выходного контура (контуров) переменного тока приобретаются отдельно.

Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES GUARDE ESTAS INSTRUCCIONES

Este manual contiene instrucciones importantes que debe seguir durante la instalación y el mantenimiento del SIE y de las baterías. Por favor, lea todas las instrucciones antes de poner en funcionamiento el equipo y guarde este manual para referencia en el futuro.



PELIGRO

Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.



ADVERTENCIA

- Para reducir el riesgo de incendio o de choque eléctrico, instale este SIE en un lugar cubierto, con temperatura y humedad controladas, libre de contaminantes conductores. La temperatura ambiente no debe exceder los 40°C. No trabaje cerca del agua o con humedad excesiva (95% máximo).
- Para los sistemas PDM con salidas cableadas permanentemente, la protección contra exceso de corriente para el/los circuito(s) de CA de salida será suministrada por terceros.
- Para los sistemas PDM con salidas cableadas permanentemente, los interruptores de desconexión debidamente clasificados para el/los circuito(s) de CA de salida serán suministrados por terceros.

Säkerhetsföreskrifter

VIKTIGA SÄKERHETSFÖRESKRIFTER SPARA DESSA FÖRESKRIFTER

Den här anvisningen innehåller viktiga instruktioner som du ska följa under installation och underhåll av UPS-enheten och batterierna. Läs alla instruktioner innan du använder utrustningen och spara den här anvisningen för framtida referens.

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



- Minska risken för brand eller 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°C. Använd inte utrustningen nära vatten eller vid hög luftfuktighet (max 95 %).
- Överströmsskydd för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.
- Bortkopplingsswitchar med passande dimensionering för de utgående växelströmskretsarna ska tillhandahållas av andra för PDM-system med fasta utgångar.

Chapter 2 Installation

This chapter describes:

- Equipment inspection
- Rackmount setup
- Low-voltage and high-voltage installation for plug-receptacle and hardwired models
- Rear panels
- Load segments

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.

PowerPass Distribution Module Setup



NOTE *If you are installing the UPS for the first time, follow the instructions in the UPS user's guide to set up the UPS and any optional Extended Battery Modules (EBMs). Do not connect your equipment to the UPS or start up the UPS before installing the PowerPass Distribution Module (PDM).*

If the UPS is already installed and operating, prepare your equipment for shutdown and use the following procedure to shut down the UPS:

1. Turn off the equipment that is connected to the UPS.
2. Press and hold the Off  button for approximately three seconds. The UPS transfers to Standby mode (if utility power is available) and removes power to your equipment.

3. Unplug the UPS from the power outlet.
4. 208V or 230V UPS models only. Disconnect the power cord from the UPS input connector.
5. Disconnect the power cord(s) between the protected equipment and the UPS.

Rackmount Setup

The PDM can be installed in 19-inch racks and needs only 2U of valuable rack space.



CAUTION

The PDM1 models are heavy (see page 29). A minimum of two people are required to lift the PDM1 model into the rack.



NOTE *Mounting rails are required for each PDM and UPS cabinet. If mounting rails are not already installed in your rack, contact your local distributor to order rail kits.*

To install the rail kit and PDM in a rack:

1. Adjust the rail size for the depth of your rack.
2. Select the proper holes in the rail for positioning the PDM in the desired location in the rack (see Figure 1).
3. Using two M5 washers and two M5 screws, secure one rail to the rear of the rack.
4. Secure the rail to the front of the rack with two M5 washers and two M5 screws.

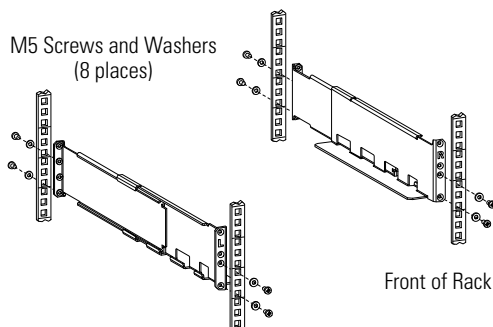


Figure 1. Securing the Rails

5. Repeat Steps 3 and 4 for the other rail.
6. Place the PDM on a flat, stable surface with the front of the PDM facing toward you.
7. Attach the provided mounting handles to the mounting brackets and secure with the provided screws (see Figure 2).
8. Align the mounting brackets with the screw holes on the side of the cabinet and secure with four M4 screws on each side.

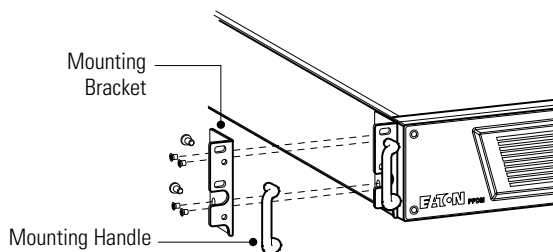


Figure 2. Installing the Mounting Handles and Brackets



NOTE The PDM must be installed above the UPS as shown in Figure 4.

9. Slide the PDM into the rack.
10. Secure the front of the cabinet to the rack using two M5 washers and two M5 screws on each side (see Figure 3).

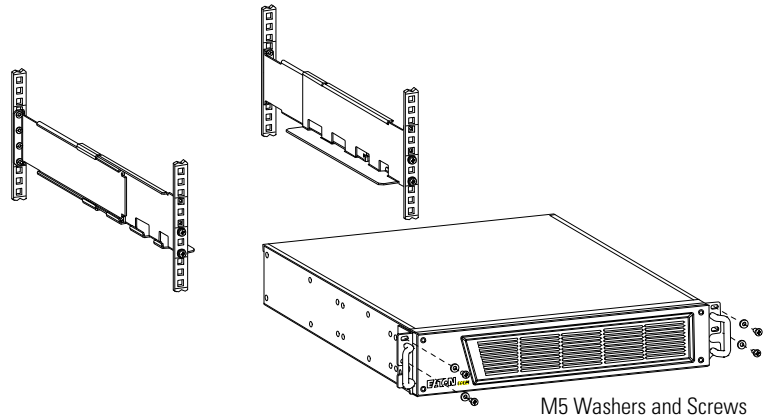


Figure 3. Securing the Front of the Cabinet

11. For plug-receptacle models, continue to “Low-Voltage PDM Installation” on page 14 or “High-Voltage PDM Installation” on page 16. For hardwired models, continue to “PDM Hardwired Installation” on page 20.

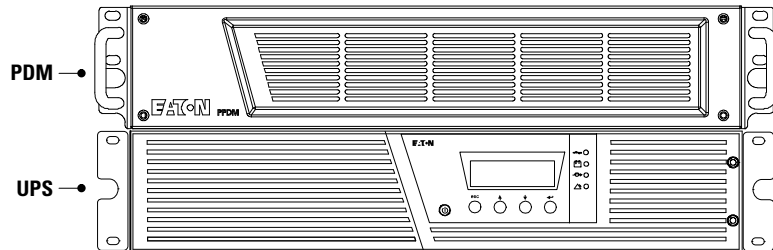


Figure 4. Rackmount UPS with PDM

Plug-Receptacle Installation

Low-Voltage PDM Installation

To install the PDM2-LV-US-P1 (EPPDML3000R-2U-4) model:

1. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 5).
2. Plug the UPS power cord into the UPS-input connector on the PDM rear panel.

3. Plug the provided UPS cord (L5-30P) into the UPS-output connector on the PDM rear panel.

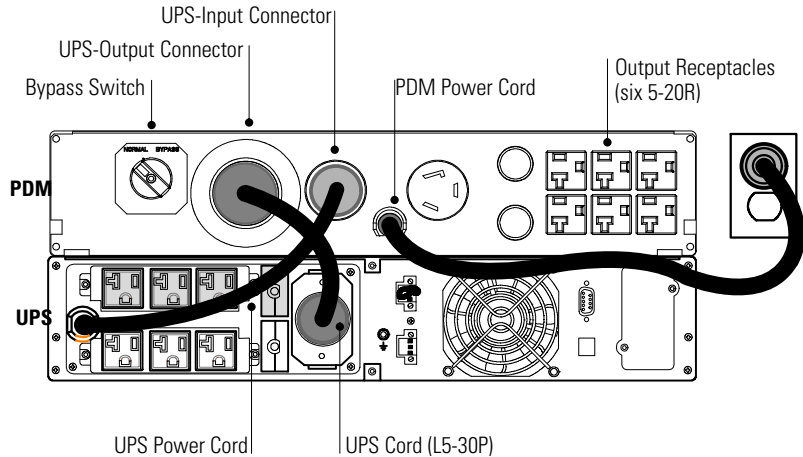


Figure 5. Typical Low-Voltage Installation [PDM2-LV-US-P1 (EPPDML3000R-2U-4) Shown]

4. Plug the equipment to be protected into the PDM output receptacles. Distribute the load evenly between the rows of receptacles.



NOTE DO NOT protect laser printers with the UPS because of the exceptionally high power requirements of the heating elements.

5. Plug the PDM power cord into a power outlet.

All front panel indicators flash briefly and the UPS conducts a self-test.

6. Press the On/Off Button on the UPS front panel for at least one second.

The UPS front panel display changes status to “UPS starting...” and the ~ indicator illuminates solid. The UPS is now in Normal mode and supplying power to your equipment.

High-Voltage PDM Installation

To install the PDM1-HV-US-P1 (EPPDMG3000R-2U-2), PDM1-HV-US-P2 (EPPDMG3000R-2U-1), and PDM2-HV-EU-P2 (EPPDMG3000R-2U-3) models:

1. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 6).
2. PDM1 models only. Select the input voltage (208V or 240V) using the Voltage Selector switch according to the utility voltage:
 - Utility voltage 200–208V: select 208V
 - Utility voltage 220–240V: select 240V



NOTE The output of the PDM1 models is 120V [PDM1-HV-US-P1 (EPPDMG3000R-2U-2) output is 120/240V], while the UPS and utility input are 200–240V.

3. Verify that the UPS power cord is detached from the UPS-input connector. Retain for use in Step 7.
4. Connect the short jumper cable (provided in the accessory kit) from the 16A UPS output receptacle into the UPS-output connector on the PDM.

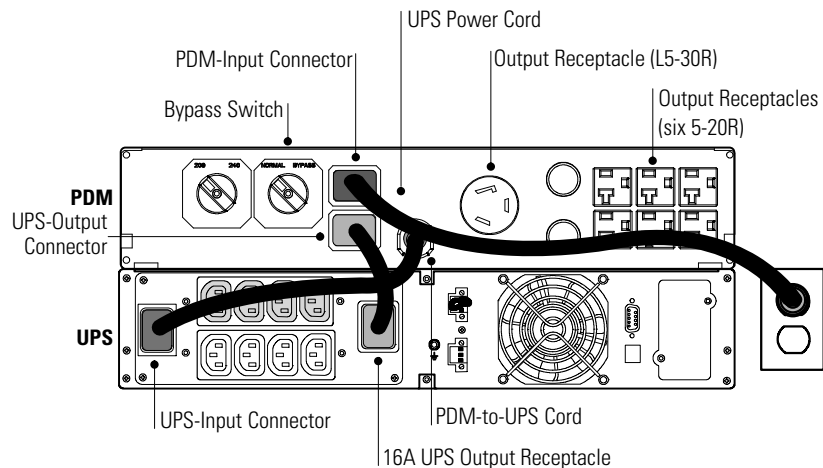


Figure 6. Typical High-Voltage Installation [PDM1-HV-US-P2 (EPPDMG3000R-2U-1) Shown]

5. Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.
6. Plug the equipment to be protected into the PDM output receptacles. Distribute the load evenly between the rows of receptacles.



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

7. Using the UPS power cord removed in Step 3, plug the cord into the PDM input connector.
8. Plug the other end of the power cord into a power outlet.

All front panel indicators flash briefly and the UPS conducts a self-test.

9. Press the On/Off Button on the UPS front panel for at least one second.

The UPS front panel display changes status to “UPS starting...” and the $\sim$ indicator illuminates solid. The UPS is now in Normal mode and supplying power to your equipment.

Plug-Receptacle PDM Rear Panels

This section shows the rear panels of the plug-receptacle PDM models.

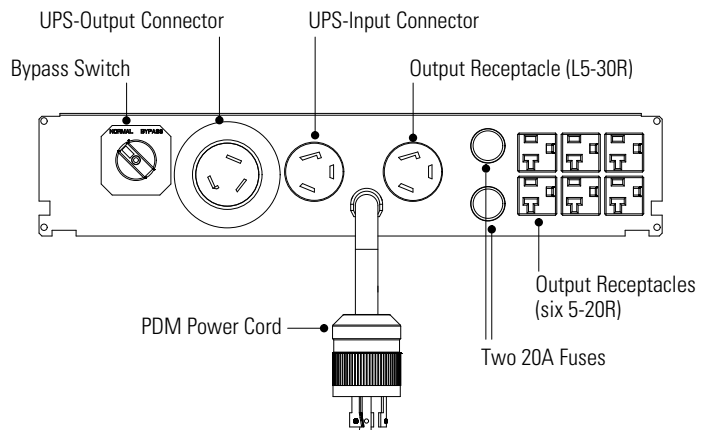


Figure 7. PDM2-LV-US-P1 (EPPDML3000R-2U-4)

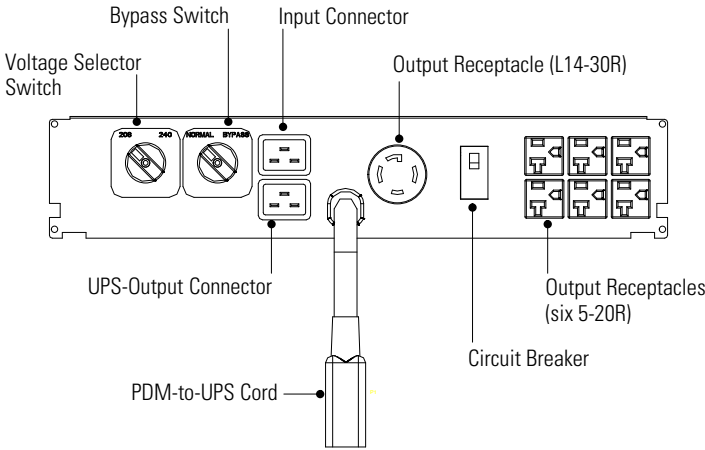


Figure 8. PDM1-HV-US-P1 (EPPDMG3000R-2U-2)

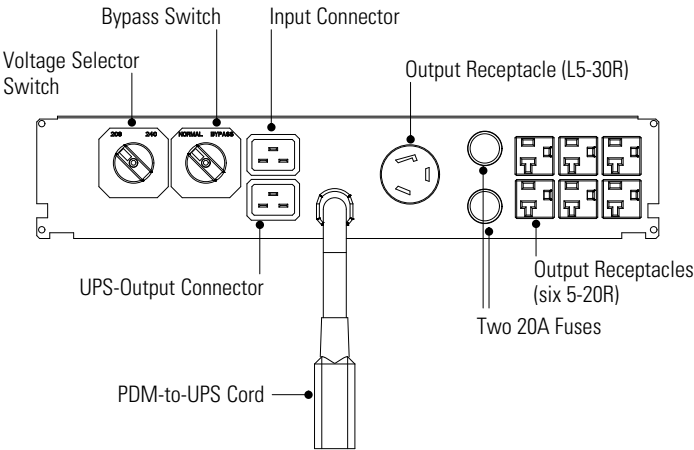


Figure 9. PDM1-HV-US-P2 (EPPDMG3000R-2U-1)

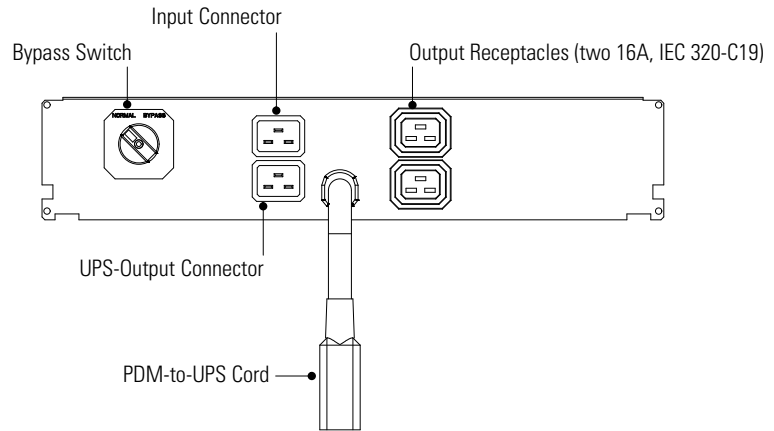


Figure 10. PDM2-HV-EU-P2 (EPPDMG3000R-2U-3)

Hardwired Installation

Low-Voltage and High-Voltage PDM Installation

WARNING



Only qualified service personnel (such as a licensed electrician) should perform the electrical installation. Risk of electrical shock.

CAUTION



- For PDM models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For PDM models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

The PDM requires a dedicated branch circuit that meets the following requirements:

- High-voltage models. 20A circuit with short circuit and overcurrent protection; 200–240 Vac
- Low-voltage models. 30A circuit with short circuit and overcurrent protection; 120 Vac
- Single-phase
- 50/60 Hz
- Flexible metal conduit (recommended for ease of service and maintenance)

To hardwire the PDM1-HV-US-HW (EPPDMG3000R-2U-HW) and PDM2-LV-US-HW (EPPDML3000R-2U-HW) models:

1. Switch off utility power at the distribution point where the PDM will be connected. Be absolutely sure there is no power.
2. Verify that the Bypass switch on the PDM is in the NORMAL position (see Figure 11 or Figure 12).
3. PDM1-HV-US-HW (EPPDMG3000R-2U-HW). (Connect the short jumper cable (provided in the accessory kit) from the 16A UPS output receptacle into the UPS-output connector on the PDM. See Figure 11.

Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.

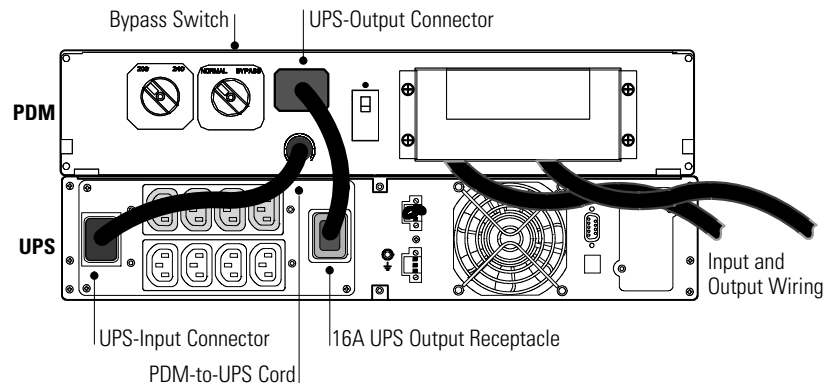


Figure 11. Typical High-Voltage Hardwired Installation [PDM1-HV-US-HW (EPPDMG3000R-2U-HW) Shown]

4. PDM2-LV-US-HW (EPPDML3000R-2U-HW). Plug the UPS power cord into the UPS-input connector on the PDM rear panel.

Using the cord provided in the accessory kit, plug the UPS 5-30 output receptacle into the UPS-output connector on the PDM rear panel

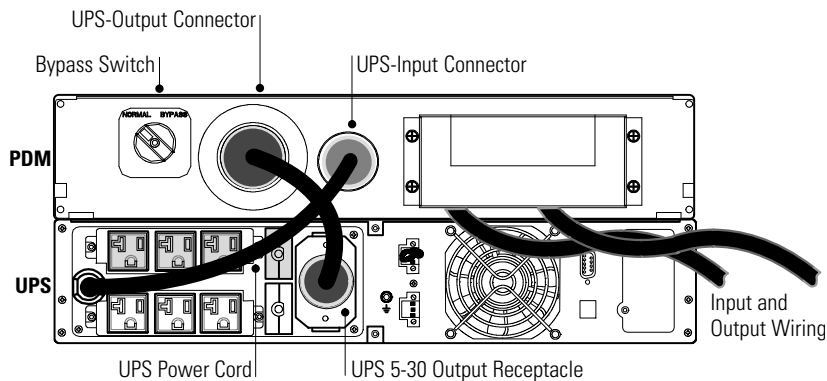


Figure 12. Typical Low-Voltage Hardwired Installation [PDM2-LV-US-HW (EPPDML3000R-2U-HW) Shown]

5. Remove the angle bracket from the terminal block cover (see Figure 13).
6. Remove the wiring knockouts as needed for your wiring configuration. Knockouts are available on the ends and bottom of the terminal block cover.

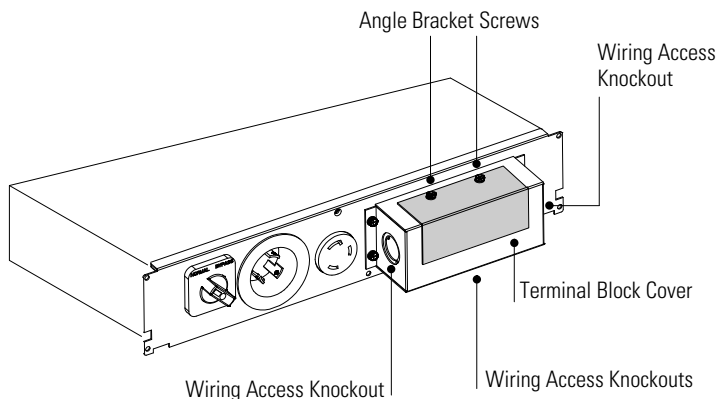


Figure 13. Wiring Access Shown, PDM2-LV-US-HW (EPPDML3000R-2U-HW)

7. Pull the wires through the conduit, leaving approximately 0.5m (2 ft) of exposed wire. Attach a flexible metal fitting to the end of the conduit.
8. Insert the conduit through the wiring access entry and attach the conduit fitting to the panel. Strip 1.5 cm (0.5") of insulation from the end of each incoming wire.
9. Connect the input and ground wires to the terminal block according to Figure 14 and Table 1.
10. Connect the output and ground wires to the terminal block according to Figure 14 and Table 1.

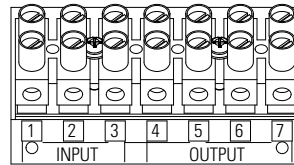


Figure 14. Terminal Block

Table 1. PDM Wiring Specifications

UPS Model	Wire Function		Terminal Position	Terminal Wire Size Rating*	Tightening Torque
PDM1-HV-US-HW (EPPDMG3000R-2U-HW)	Input	L1	2	2.0–13.3 mm ² (14–6 AWG)	2.0 Nm (16 lb in)
		L2	3		
		Ground	1		
	Output	L1	5	2.0–13.3 mm ² (14–6 AWG)	2.0 Nm (16 lb in)
		L2	4		
		Neutral	6		
		Ground	7		
PDM2-LV-US-HW (EPPDML3000R-2U-HW)	Input	L1	2	2.0–13.3 mm ² (14–6 AWG)	2.0 Nm (16 lb in)
		Neutral	3		
		Ground	1		
	Output	L1	5	2.0–13.3 mm ² (14–6 AWG)	2.0 Nm (16 lb in)
		Not Used	4		
		Neutral	6	2.0–13.3 mm ² (14–6 AWG)	2.0 Nm (16 lb in)
		Ground	7		

* Use 2.0 mm² (14 AWG) 75°C copper wire minimum.

11. PDM1-HV-US-HW (EPPDMG3000R-2U-HW). Select the input voltage (208V or 240V) using the Voltage Selector switch according to the utility voltage:

- Utility voltage 200–208V: select 208V
- Utility voltage 220–240V: select 240V

12. Switch the main utility breaker on.

All front panel indicators flash briefly and the UPS conducts a self-test.

13. Press the On/Off Button on the UPS front panel for at least one second.

The UPS front panel display changes status to “UPS starting...” and the $\sim$ indicator illuminates solid. The UPS is now in Normal mode and supplying power to your equipment.

Hardwired PDM Rear Panels

This section shows the rear panels of the hardwired PDM models.

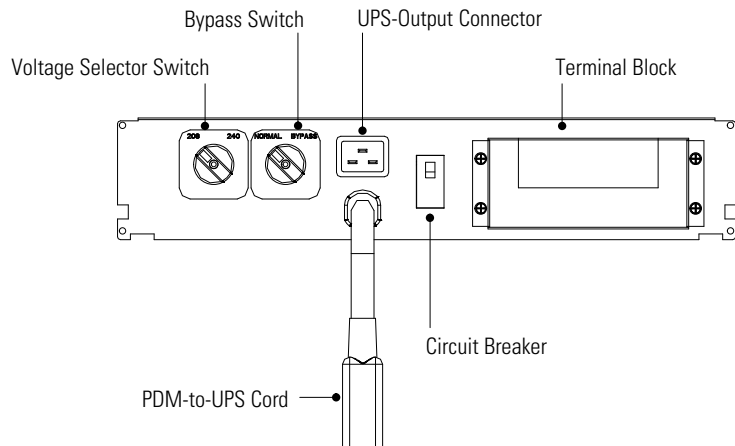


Figure 15. PDM1-HV-US-HW (EPPDMG3000R-2U-HW)

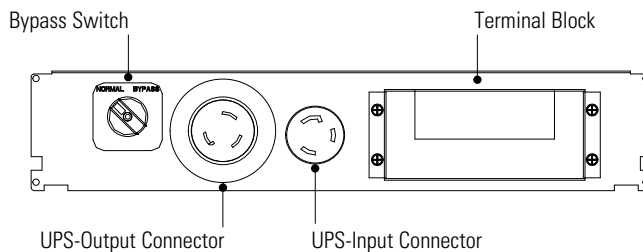


Figure 16. PDM2-LV-US-HW (EPPDML3000R-2U-HW)

Load Segments

The PDM plugs into Load Segment 2 on the UPS rear panel. See the UPS user's guide for more information about load segments.



NOTE When the PDM is in Bypass mode, all load segments are switched to utility power and cannot be controlled until the PDM Bypass switch is returned to the NORMAL position.

Chapter 3 Operation

The PowerPass Distribution Module (PDM) allows you to remove the UPS while providing power to your protected equipment. This Maintenance Bypass feature is useful when replacing the UPS for maintenance or upgrades.

Using Maintenance Bypass

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

1. Turn the Bypass switch on the PDM to the BYPASS position. The PDM is now powering your equipment from utility power.
2. Press and hold the Off  button on the UPS for approximately three seconds. The UPS switches to Standby mode.
3. If an optional Extended Battery Module (EBM) is installed, unplug the EBM cable from the battery connector on the UPS rear panel.
4. Low-voltage models. Disconnect the jumper cable from the L5-30P UPS-output on the PDM rear panel. See Figure 5 on page 15.

Disconnect the UPS power cord from the UPS-input connector on the PDM rear panel.

5. High-voltage models: Disconnect the jumper cable from the 16A output receptacle on the UPS rear panel. See Figure 6 on page 16.

Disconnect the PDM-to-UPS cord from the input connector on the UPS rear panel.

6. Remove the UPS.

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

1. Reinstall the UPS.
2. If an optional EBM is installed, reconnect the EBM cable to the battery connector on the UPS rear panel.
3. Low-voltage models. Plug the UPS L5-30P output receptacle into the UPS-output connector on the PDM rear panel using the provided cord.

Plug the UPS power cord into the UPS-input connector on the PDM rear panel.

All UPS front panel indicators flash briefly and the UPS conducts a self-test. The front panel LCD displays the Eaton logo.

4. High-voltage models. Plug the jumper cable from the UPS-output connector on the PDM into the 16A UPS output receptacle.

Plug the attached PDM-to-UPS cord into the input connector on the UPS rear panel.

All UPS front panel indicators flash briefly and the UPS conducts a self-test. The front panel LCD displays the Eaton logo.

5. Start the UPS by pressing the On | button.

The UPS front panel display changes status to “UPS starting...” and the  indicator illuminates solid.

6. Turn the Bypass switch on the PDM to the NORMAL position.

The bar graph indicators display the percentage of load being applied to the UPS. The UPS is now in Normal mode and supplying power to your equipment.

Chapter 4 Specifications

This chapter provides the following specifications:

- Model list
- Dimensions and weight
- Power connections
- Environmental and safety

Table 2. Model List

	PDM Model	For Use with Eaton 9130 UPS Models
PowerPass Distribution Module (PDM) Models	PDM1-HV-US-P1 (EPPDMG3000R-2U-2)	PW9130G2500R-XL2UEU PW9130G3000R-XL2UEU PW9130i3000R-XL2U
	PDM1-HV-US-P2 (EPPDMG3000R-2U-1)	PW9130G2500R-XL2UEU PW9130G3000R-XL2UEU PW9130i3000R-XL2U
	PDM1-HV-US-HW (EPPDMG3000R-2U-HW)	PW9130G2500R-XL2UEU PW9130G3000R-XL2UEU PW9130i3000R-XL2U
	PDM2-HV-EU-P2 (EPPDMG3000R-2U-3)	PW9130G2500R-XL2UEU PW9130G3000R-XL2UEU PW9130i3000R-XL2U
	PDM2-LV-US-P1 (EPPDML3000R-2U-4)	PW9130L2500R-XL2U PW9130L3000R-XL2U
	PDM2-LV-US-HW (EPPDML3000R-2U-HW)	PW9130L2500R-XL2U PW9130L3000R-XL2U

Table 3. Dimensions and Weight

	PDM1 Models	PDM2 Models
Dimensions (WxDxH)	43.2 × 60.7 × 8.9 cm 17.0" × 23.9" × 3.5" (2U)	
Weight	34.5 kg (76 lb)	9 kg (20 lb)

Table 4. Power Connections

Model	Input Connection to PDM	Output Receptacles
PDM1-HV-US-P1 (EPPDMG3000R-2U-2)	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(6) 5-20R, (1) L14-30R
PDM1-HV-US-P2 (EPPDMG3000R-2U-1)	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(6) 5-20R, (1) L5-30P
PDM1-HV-US-HW (EPPDMG3000R-2U-HW)	30A terminal block (3 terminals)	30A terminal block (4 terminals)
PDM2-HV-EU-P2 (EPPDMG3000R-2U-3)	16A, IEC 320-C20 input connector Country-specific, detachable power cord	(2) 16A, IEC 320-C19
PDM2-LV-US-P1 (EPPDML3000R-2U-4)	6-ft, L5-30P attached power cord	(6) 5-20R, (1) L5-30P
PDM2-LV-US-HW (EPPDML3000R-2U-HW)	30A terminal block (3 terminals)	30A terminal block (3 terminals)

Table 5. Environmental and Safety

	PDM1 Models	PDM2 Models
Overcurrent Protection	Two 20A fuses PDM1-HV-US-P1 (EPPDMG3000R-2U-2) and PDM1-HV-US-HW (EPPDMG3000R-2U-HW): 15A circuit breaker	PDM2-LV-US-P1 (EPPDML3000R-2U-4): Two 20A fuses
Isolation Transformer	3 kVA (208–240): 120/240V	None
Bypass Switch	30A, 600V	
Operating Temperature	0°C to 40°C (32°F to 104°F)	
Storage Temperature	-22°C to 55°C (-7°F to 131°F)	
Relative Humidity	5–95% noncondensing	
Safety Conformance	UL 1778; CSA C22.2, No. 107.1, 107.2; NOM-019-SCFI	UL 1778 CSA C22.2, No. 107.1, 107.2 PDM2-HV-EU-P2 (EPPDMG3000R-2U-3): EN 50091-1-1, IEC 950
Agency Markings	UL, cUL PDM2-HV-EU-P2 (EPPDMG3000R-2U-3): NEMKO only	
EMC (Class A)	FCC Part 15, ICES-003	EN 50091-2, FCC Part 15, ICES-003