

Powerware Series

**Eaton® 9910 UPS and EBM
Installation Guide for IBM Applications**

3000 VA Models



Powering Business Worldwide

Powerware Series

**Eaton® 9910 UPS and EBM
Installation Guide for IBM Applications**

3000 VA Models



Powering Business Worldwide

Requesting a Declaration of Conformity

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

- Harmonized Standards: IEC 62040-1-1 and IEC 62040-2; 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

Eaton and Powerware are registered trademarks of Eaton Corporation or its subsidiaries and affiliates. IBM and AIX are registered trademarks of International Business Machines Corporation. Linux is a registered trademark of Linus Torvalds. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries. National Electrical Code and NEC are registered trademarks of National Fire Protection Association, Inc. Phillips is a registered trademark of Phillips Screw Company. All other trademarks are property of their respective companies.

©Copyright 2011 Eaton Corporation, Raleigh, NC, USA. All rights reserved. No part of this document may be reproduced in any way without the express written approval of Eaton Corporation.

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.

IEC 62040-2

Some configurations are classified under IEC 62040-2 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.

VCCI Notice

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Special Symbols

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



RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.



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.

Table of Contents

1	Preparation	1
	Parts List	1
	Inspecting the Equipment	4
	Tools Required	4
2	Safety Warnings	5
3	Installation	17
	Installation Precautions	17
	UPS Rear Panels	19
	Replacing an EBM	20
	Rack Installation and UPS Internal Battery Connection	22
	Connecting the EBM	30
	Remote Emergency Power-off (REPO)	32
	About REPO	32
	Installing REPO	32
	Initial Startup	34
4	Shipping the UPS in a Rack	37
	Installing the Shipping Bracket on the UPS	37
	Removing the Shipping Bracket from the UPS	38
5	Operation	39
	Control Panel	39
	Turning on the UPS	40
	Starting the UPS on Battery	40
	Turning off the UPS	40
	Display Functions	40
6	Communication Features	41
	UPS Manager Software	41
	Communication Ports	41
	Communication Cards	42
	Load Segments	42

7	Service and Support	43
	Updating the UPS Firmware	43
	Contacting Service	43

Chapter 1 Preparation

Use the information in this chapter to prepare to install or connect the UPS, EBM, and optional accessories.



NOTE *The illustrations in this document might differ slightly from your hardware.*

Parts List

IBM® and Eaton part numbers are subject to change without notice.

Table 1. 9910-E35 UPS Base Configuration (74Y8478)

Quantity	IBM MTM	IBM FC	IBM PN	Eaton PN	Description
1	9910-E35	—	74Y8478	9003-4041-00P • 730-B0340-00P • 730-B0107-00P	9910-E35 UPS 3000 VA, 208V • 3U cabinet, 208V • Battery
1	—	—	—	730-B0104-00P	Rail Kit
1	—	—	—	373-52791-00	3000 VA Shipping Bracket
1	—	—	74Y8480	744-A1321-00P	9910-E35 and 9910-E36 Accessory Kit

Table 2. 9910-E36 UPS Base Configuration (74Y8479)

Quantity	IBM MTM	IBM FC	IBM PN	Eaton PN	Description
1	9910-E36	—	74Y8479	9003-4040-00P • 730-B0343-00P • 730-B0107-00P	9910-E36 UPS 3000 VA, 230V • 3U cabinet, 230V • Battery
1	—	—	—	730-B0104-00P	Rail Kit
1	—	—	—	373-52791-00	3000 VA Shipping Bracket
1	—	—	74Y8480	744-A1321-00P	9910-E35 and 9910-E36 Accessory Kit

Table 3. Rail Kit, All Models (730-B0104-00P)

IBM MTM	IBM FC	IBM PN	Eaton PN	Description	Quantity per Rail Kit
—	—	—	373-52322-00	Slide Rail, Front Right	1 each (assembled into one Left Rail Assembly and one Right Rail Assembly)
—	—	—	373-52323-00	Slide Rail, Front Left	
—	—	—	373-52324-00	Slide Rail, Rear Right	
—	—	—	373-52325-00	Slide Rail, Rear Left	
—	—	—	410-30407-00	Rail Adjustment Screw	2 (1 each per Rail Assembly)
—	—	—	612-25342-00	Round Hole Adapter Plate	4

Table 4. 9910-E35 and 9910-E36 UPS Accessory Kit (74Y8480)

Quantity	Eaton PN	Description
1	P-164000012	Documentation CD-ROM
1	619-00441-00	UPS Management Software CD-ROM
1	P-164000006	3000 VA UPS and EBM Installation Guide
1	614-03781-00	REACH document
1	730-B0350-00P	UPS front cover
1	720-60258-00	RS-232 cable
16	420-90804-00	Screws, M5 × 16 round slotted for rack installation
2	108-00650-00	IEC 320-C13 to C14 jumper cords

NOTE The UPS and EBM User's Guide (P-164000005) and the UPS Firmware Upgrade User's Guide (P-164000011) are available as PDFs on the Documentation CD or at www.eaton.com/IBM.

Table 5. 9910-E35 and 9910-E36 UPS Options Matrix

IBM MTM	IBM FC	IBM PN	Eaton PN	Description	Quantity
—	9910-6651	74Y8481	9000-1339-00P	Extended Battery Module (EBM)	Min: 0, Max: 1
—	—	74Y8482	744-A1323-00P	EBM Accessory Kit	1 per FC 9910-6651
—	2945	74Y8489	744-A1401-00P	Network Management Card (NMC)	Min: 0, Max: 1
—	2944	74Y8488	744-A1402-00P	Relay-Serial Card	
—	2975	42R4335	103005157	Power cord, C19 to L6-30P 32A, 1.8m/6 ft., with two-pole 20A circuit breaker *	Min: 0, Max: 1
—	2976	42R4336	103005158	Power cord, C19 to IEC 309 (P+N+G) 32A, 3m/10 ft, with one-pole 16A circuit breaker *	

* Rated for 30A outlets. The built-in circuit breaker provides the required 20A overcurrent protection for the UPS.

Table 6. 9910-6651 EBM Base Configuration (74Y8481)

Quantity	IBM MTM	IBM FC	IBM PN	Eaton PN	Description
1	—	9910-6651	74Y8481	730-B0346-00P	9910-6651 EBM 3000 VA
1	—	—	—	730-B0104-00P	Rail Kit

Table 7. EBM Accessory Kit (74Y8482)

Quantity	Eaton PN	Description
1	P-164000006	3000 VA UPS and EBM Installation Guide
1	614-03781-00	REACH document
1	730-B0030-00P	EBM front cover
16	420-90804-00	Screws, M5 × 16 round slotted for rack installation

Table 8. Network Management Card (NMC) Base Configuration (74Y8489)

Quantity	IBM MTM	IBM FC	IBM PN	Eaton PN	Description
1	—	2945	74Y8489	710-A0931-00P	NMC Card
1	—	—	81Y1914	P-164000009	NMC Quick Installation Guide
1	—	—	—	CAB-00010	NMC Setting Cable

NOTE The NMC User's Guide (P-164000008) is available as a PDF on the Documentation CD or at www.eaton.com/IBM.

Table 9. Relay-Serial Card Base Configuration (74Y8488)

Quantity	IBM MTM	IBM FC	IBM PN	Eaton PN	Description
1	—	2944	74Y8488	103006828	Relay-Serial Card
1	—	—	81Y1914	P-164000010	Relay-Serial Card Installation Guide
1	—	—	—	720-65366-00	Communication Cable, DB-9 to DB-9

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.

Tools Required

To assemble the components, you may need the following tools:

- #2 Phillips® screwdriver
- Medium flat-bladed screwdriver

Chapter 2 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

- This UPS contains its own energy source (batteries). The UPS output may carry live voltage even when the UPS is not connected to an AC supply.
- 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 (90% maximum).
- To reduce the risk of fire, connect only to a circuit provided with branch circuit overcurrent protection in accordance with the National Electrical Code® (NEC®), ANSI/NFPA 70, or your local electrical code:

Model	Overcurrent Protection
9910-E35, 9910-E36	20A

- Output overcurrent protection and disconnect switch must be provided by others.
- To comply with international standards and wiring regulations, the sum of the leakage current of the UPS and the total equipment connected to the output of this UPS must not have an earth leakage current greater than 3.5 milliamperes.
- If the UPS requires any type of transportation, disconnect the internal UPS batteries before transporting.

**CAUTION**

- Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and the required precautions. Keep unauthorized personnel away from batteries.
 - Batteries can present a risk of electrical shock or burn from high short-circuit current. The following precautions should be observed: 1) Remove watches, rings, or other metal objects; 2) Use tools with insulated handles; 3) Wear rubber gloves and boots; 4) Do not lay tools or metal parts on top of batteries; 5) Disconnect the charging source prior to connecting or disconnecting battery terminals.
 - Determine if the battery is inadvertently grounded. If inadvertently grounded, remove the utility source from the ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).
 - Proper disposal of batteries is required. Refer to your local codes for disposal requirements.
 - Never dispose of batteries in a fire. Batteries may explode when exposed to flame.
 - Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes and may be extremely toxic.
 - Replace batteries with the same number and type of batteries as originally installed in the UPS.
 - For PLUGGABLE EQUIPMENT, the power outlet shall be installed near the equipment and shall be easily accessible.
 - The UPS may be connected to a maximum of one Extended Battery Module (EBM).
-

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 AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.



AVERTISSEMENT!

- Cette onduleur possède sa propre source d'alimentation (batteries). Il est possible que la sortie de l'onduleur soit sous tension même lorsque l'onduleur n'est pas connectée à une alimentation CA.
- 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).
- Afin de réduire le risque d'incendie, connectez seulement à un circuit équipé d'un dispositif de protection divisionnaire avec un ampérage conforme à votre code électrique local :

Modèle	Protection de surintensité
9910-E35, 9910-E36	20A

- La protection de surintensité de sortie ainsi que le sectionneur doivent être fournis par des tiers.
- Afin d'être conforme aux normes et règlements internationaux de câblage, le courant de fuite à la terre de la totalité du matériel branché sur la sortie de l'onduleur ne doit pas dépasser 3,5 mA.
- Si l'onduleur doit être transporté, débranchez les batteries internes de l'onduleur avant le transport.



ATTENTION!

- La réparation des batteries doit être réalisée ou supervisée par un personnel connaissant les batteries et les précautions requises. Maintenez le personnel non autorisé éloigné des batteries.
- Les batteries peuvent présenter un risque de choc électrique ou de brûlure provenant d'un courant de court-circuit élevé. Les précautions suivantes doivent être respectées :
1) Retirez les montres, bagues ou autres objets métalliques ; 2) Utilisez des outils avec des poignées isolées ; 3) Portez des gants et des bottes en caoutchouc ; 4) Ne laissez pas d'outils ou de pièces métalliques sur les batteries ; 5) Déconnectez la source de charge avant de connecter ou de déconnecter des bornes de batterie.
- Déterminez si la batterie est mise à la terre par mégarde. Si elle est mise à la terre par mégarde, retirez la source secteur de la terre. Le contact avec toute pièce d'une batterie mise à la masse peut provoquer un choc électrique. La probabilité d'un tel choc peut être réduite si de telles mises à la terre sont retirées pendant l'installation et la maintenance (applicables aux alimentations de batterie de l'équipement et distante n'ayant pas un circuit d'alimentation relié à la terre).
- Une mise au rebut réglementaire des batteries est obligatoire. Consulter les règlements en vigueur dans votre localité.
- Ne jamais jeter les batteries au feu. L'exposition aux flammes risque de les faire exploser.
- N'ouvrez pas ou ne détériorez pas la ou les batteries. L'électrolyte relâché est nocif pour la peau et les yeux et peut être extrêmement toxique.
- Remplacez les batteries par des batteries de même type et en même nombre que celles installées à l'origine dans l'onduleur.
- Pour un ÉQUIPEMENT ENFICHABLE, la prise de courant doit être installée près de l'équipement et facilement accessible.
- L'onduleur peut être connecté au maximum à un Module de batterie externe (EBM).

Sicherheitswarnungen

WICHTIGE SICHERHEITSANWEISUNGEN AUFBEWAREN

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

- Dieses USV (Unterbrechungsfreies Stromversorgungssystem) enthält eine eigene Energiequelle (Batterien). Der USV-Ausgang kann Spannung führen, auch wenn das USV nicht an eine Wechselstromquelle angeschlossen ist.
- 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.
- Zur Vermeidung von Brandgefahr sollte das Gerät nur an einen Stromkreis angeschlossen werden, der mit einem Überstromschutz mit einem Nennstrom gemäß Ihren örtlichen Elektrizitätsvorschriften ausgestattet ist:

Modell	Überstromschutz
9910-E35, 9910-E36	20A

- Der Ausgangs-Überlaststromschutz und der Trennschalter müssen von anderen Herstellern geliefert werden.
- Um internationale Normen und Verdrahtungsvorschriften zu erfüllen, dürfen die an den Ausgang dieser USV angeschlossenen Geräte zusammen einen Erdableitstrom von insgesamt 3,5 Milliampere nicht überschreiten.
- Muss die USV transportiert werden, so müssen die internen USV-Batterien vor dem Transport vom Gerät getrennt werden.



VORSICHT!

- Die Wartung der Batterien sollte unter Befolgung der erforderlichen Sicherheitsvorkehrungen durch fachkundiges Personal erfolgen oder beaufsichtigt werden. Nicht ausreichend geschultem Personal ist der Zugang zu den Batterien zu verwehren.
- Batterien bergen das Risiko eines elektrischen Schlages oder einer Verletzung durch hohen Kurzschlussstrom. Bitte befolgen Sie die folgenden Sicherheitsvorkehrungen: 1) Nehmen Sie Uhren, Ringe und andere Metallgegenstände ab. 2) Verwenden Sie Werkzeug mit isoliertem Handgriff. 3) Tragen Sie Gummihandschuhe und Gummistiefel. 4) Legen Sie keine Werkzeuge oder Metallteile auf die Batterien. 5) Trennen Sie die Aufladequelle vor dem Anschließen oder Trennen der Batterieklemmen.
- Ermitteln Sie, ob die Batterie unbeabsichtigt geerdet ist. Im Falle der unbeabsichtigten Erdung ist die Netzstromquelle von der Erdung zu entfernen. Durch Berührung von geerdeten Batterieteilen kann ein elektrischer Schlag verursacht werden. Die Wahrscheinlichkeit eines solchen Schlages kann verringert werden, wenn derartige Erdungen bei der Installation und Wartung aufgehoben werden (dies gilt für Geräte und Remote-Batterieversorgungen ohne geerdeten Versorgungsschaltkreis).
- Die Batterien müssen ordnungsgemäß entsorgt werden. Hierbei sind die örtlichen Bestimmungen zu beachten.
- Batterien niemals verbrennen, da sie explodieren können.
- Öffnen oder manipulieren Sie die Batterien nicht anderweitig. Auslaufende Batteriesäure ist schädlich für Haut und Augen und kann hochgiftig sein.
- Ersetzen Sie die Batterie mit einer Batterie des gleichen Typs und in der gleichen Anzahl sie ursprünglich in der USV installiert.
- Bei AN EINESTECKDOSE ANSCHLOSSENEN GERÄTEN muss sich die Netzsteckdose in der Nähe des Gerätes befinden und einfach zugänglich sein.
- Die USV darf maximal an ein Externes Batteriemodul (EBM) angeschlossen werden.

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



- Este no-break possui sua própria fonte de energia (baterias). A saída do no-break pode estar energizada mesmo que este não esteja conectado a uma fonte de energia elétrica.
- 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: 90%).
- Para reduzir o risco de incêndio, conecte apenas em um circuito que tenha proteção de corrente com classificação de amperagem de acordo com seu código elétrico local:

Modelo	Proteção da sobrecarga
9910-E35, 9910-E36	20A

- A proteção contra a sobretensão de saída e o disjuntor deve ser fornecida por terceiros.
- Para estar de acordo com os padrões internacionais e os regulamentos de fiação, o equipamento total conectado à saída desta UPS não deve ter uma corrente de fuga à terra maior que 3,5 miliampères.
- Se o UPS precisar de qualquer tipo de transporte, desconecte as baterias internas do UPS antes de transportar.

**PERIGO**

- O serviço na bateria deve ser feito ou supervisionado por funcionários com conhecimento de baterias e das precauções necessárias. Mantenha funcionários não autorizados longe das baterias.
 - As baterias podem apresentar um risco de choque elétrico ou queimadura do calor de curto circuito. As seguintes precauções devem ser observadas: 1) Remova relógios, anéis ou outros objetos de metal; 2) Use ferramentas com manoplas isoladas; 3) Use luvas e botas de borracha; 4) Não deixe ferramentas ou peças de metal sobre as baterias; 5) Desconecte a fonte de carga antes de conectar ou desconectar os terminais da bateria.
 - Determine se a bateria está aterrada inadvertidamente. Se aterrada inadvertidamente, remova a fonte utilitária do aterramento. Tocar qualquer parte de uma bateria aterrada pode resultar em choque elétrico. A possibilidade de choque elétrico pode ser reduzida se estes aterramentos forem removidos durante a instalação e manutenção (aplicável ao equipamento e baterias remotas sem circuito de aterramento).
 - Siga as instruções apropriadas ao desfazer-se das baterias. Consulte os códigos do local para maiores informações sobre os regulamentos de descarte de produtos.
 - Nunca jogue as baterias no fogo, porque há risco de explosão.
 - Não abra ou mutile a bateria ou baterias. A liberação de eletrólite é perigosa para a pele e olhos e pode ser extremamente tóxica.
 - Troque as baterias com baterias do mesmo número e tipo que as originais instaladas no UPS.
 - Para EQUIPAMENTO PLUGÁVEL, a tomada de energia deve ser instalada perto do equipamento e deve ser de fácil acesso.
 - O UPS pode ser conectado no máximo em um Módulo Externo de Bateria (EBM).
-

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

- В данном ИБП установлены собственные источники энергии (батареи). В ИБП может иметься напряжение даже в том случае, если он не подключен к сети переменного тока.
- Для снижения опасности пожара или поражения электрическим током устанавливайте ИБП в закрытом помещении с контролируемой 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 повышенной влажностью (макс. 90%).
- Для снижения риска пожара подключайтесь только к сети, снабженной ответвлением с защитой от перегрузки с силой тока в соответствии с вашими местными электрическими правилами:

модель	предохранение от перегрузок по току
9910-E35, 9910-E36	20А

- Устройство защиты от перегрузки выходного напряжения и размыкающий переключатель приобретаются отдельно.
- Для обеспечения соблюдения требований международных стандартов и требований к разводке электрических цепей, суммарная величина тока утечки на землю всего оборудования, подключенного к выходу ИБП, не должна превышать 3,5 миллиампера.
- Если ИБП требует какой-либо транспортировки, отсоединяйте внутренние батареи ИБП перед транспортировкой.

**ОСТОРОЖНО**

- Обслуживание батарей должно выполняться или контролироваться персоналом, знакомым с батареями и мерами предосторожности. Лица, не обладающие соответствующими полномочиями, не должны допускаться к батареям.
 - Батареи могут представлять опасность с точки зрения поражения электрическим током или ожогов в результате воздействия сильного тока в случае короткого замыкания. Следующие меры предосторожности следует соблюдать: 1) Снять часы, кольца и металлические предметы; 2) Применять инструменты с изоляцией; 3) Надеть резиновые перчатки и сапоги; 4) Не класть инструменты или металлические части на батареи; 5) отсоединять источник зарядки перед подключением или отключением контактов батареи.
 - Проверьте, не заземлена ли батарея случайно. Если случайно подключена к заземлению, отключите проводник от заземления. Контакт с любой частью заземленной батареи может привести к электрическому удару. Вероятность такого удара можно снизить, если убирать такое заземление во время установки и обслуживания (применимо к оборудованию и удаленному аккумуляторному питанию, не имеющему заземленную цепь питания).
 - Необходимо соблюдать правила утилизации аккумуляторов. Обратитесь к местным нормативным актам за информацией о требованиях к утилизации.
 - Никогда не бросайте аккумуляторы в огонь. Аккумуляторы могут взорваться под воздействием огня.
 - Не вскрывайте и не портите батарею или батареи. Вытекший электролит вреден для кожи и может быть исключительно токсичным.
 - Меняйте батареи на то же количество и тип, который изначально установлен в ИБП.
 - Для **ОБОРУДОВАНИЯ**, которое **ПОДКЛЮЧАЕТСЯ К СЕТИ**: электрическая розетка должна быть установлена вблизи оборудования и быть легкодоступной.
 - ИБП может быть подключен максимум к одному модулю Внешний батарейный модуль (EBM).
-

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



- Este SIE contiene su propia fuente de energía (baterías). La salida del SIE puede transportar voltaje activo aun cuando el SIE no esté conectado con una fuente de CA.
- 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 (90% máximo).
- Para reducir el riesgo de incendio, conecte únicamente a un circuito provisto con protección de sobrecorriente en el circuito ramal con una clasificación de amperios de acuerdo con su código eléctrico local:

Modelo	Protección de la sobreintensidad de corriente
9910-E35, 9910-E36	20A

- La protección contra sobrecorriente de salida y el conmutador de desconexión debe suministrarse por parte de terceros.
- Para cumplir con los estándares internacionales y las normas de instalación, la totalidad de los equipos conectados a la salida de este SIE no debe tener una intensidad de pérdida a tierra superior a los 3,5 miliamperios.
- Si el SAI requiere de algún tipo de transporte, desconecte las baterías internas del SAI antes de transportar.



PRECAUCIÓN

- El servicio a las baterías se debe llevar a cabo o estar supervisado por personal con conocimientos sobre las baterías y las precauciones requeridas. No permita que personal no autorizado entre en contacto con las baterías.
- Las baterías pueden presentar riesgo de descarga eléctrica o quemaduras por cortocircuito. Deberán respetarse las siguientes medidas de precaución: 1) Quítense relojes, anillos y otros objetos metálicos; 2) Use herramientas con mangos aislados; 3) Use guantes y botas de goma; 4) No coloque las herramientas o piezas metálicas sobre las baterías; 5) Desconecte la carga antes de conectar o desconectar los terminales de la batería.
- Determine si la batería ha sido puesta a tierra inadvertidamente. Si se ha conectado a tierra inadvertidamente, quite la fuente de energía de la tierra. El contacto de cualquier parte de una batería con toma a tierra puede provocar un cortocircuito eléctrico. La posibilidad de tal cortocircuito puede ser reducida si se retiran las tomas a tierra durante la instalación y el mantenimiento (aplicable al equipamiento y a las baterías remotas que no tengan un circuito de alimentación con toma de tierra).
- Es necesario desechar las baterías de un modo adecuado. Consulte las normas locales para conocer los requisitos pertinentes.
- Nunca deseche las baterías en el fuego. Las baterías pueden explotar si se las expone a la llama.
- No abra ni mutile las baterías. La liberación de electrolitos es dañina para la piel y los ojos y puede ser extremadamente tóxica.
- Reemplace las baterías con baterías del mismo tipo y número que las instaladas originalmente en el SAI.
- Para EQUIPOS CON ENCHUFE, la toma de alimentación deberá instalarse cerca del equipo y se podrá acceder rápidamente a ella.
- El SAI se puede conectar a un máximo de un Externes Batteriemodul (EBM).

Chapter 3 Installation

The 9910 UPS and EBM can be purchased separately or factory-installed in an IBM rack.



NOTE Review “Preparation” on page 1 and the following “Installation Precautions,” and then follow the procedures in this chapter that apply to your installation.

Installation Precautions

Before you install or connect the UPS or EBM in a rack cabinet, observe the following precautions:

- Read and understand all warnings and cautions listed in “Safety Warnings” on page 5.
- Review the documentation that comes with your rack cabinet for safety and cabling information.



NOTE Removing the rack doors and side panels might make installation easier. See the rack cabinet documentation for more information.

- Verify that the room air temperature is below 35°C (95°F).
- Do not block any air vents. Usually 15 cm (6 in.) of air space provides proper airflow.
- Take all necessary precautions to handle the weight of the devices.

CAUTION



The UPS and EBM are heavy (see Table 10). Use at least the minimum number of people required to lift the cabinets into the rack.

Table 10. Weights

	UPS	EBM
Weights	40.9 kg (90.2 lb) total weight 21.3 kg (47 lb) internal batteries only 19.6 kg (43.2 lb) cabinet only	52.2 kg (115.1 lb)
Handling Requirement	Two persons	Three persons

INSTALLATION

- Plan the device installation starting from the bottom of the rack cabinet. Install the heaviest device in the bottom of the rack cabinet.
- Do not extend more than one device out of the rack cabinet at the same time.
- Connect all power cords to properly wired and grounded electrical outlets.
- Do not overload the power outlet when you install multiple devices in the rack cabinet.

UPS Rear Panels



NOTE The shaded areas shown in the following figures indicate the load segment groupings. The shading does not appear on the cabinet.

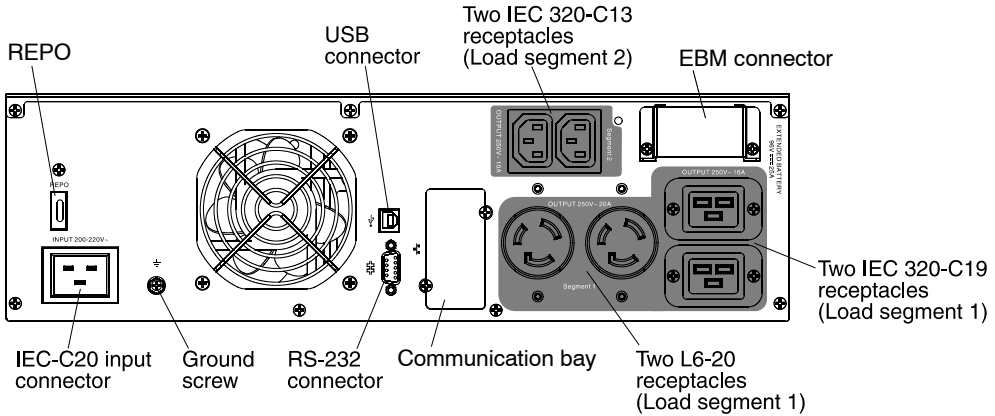


Figure 1. The 9910-E35 UPS Rear Panel

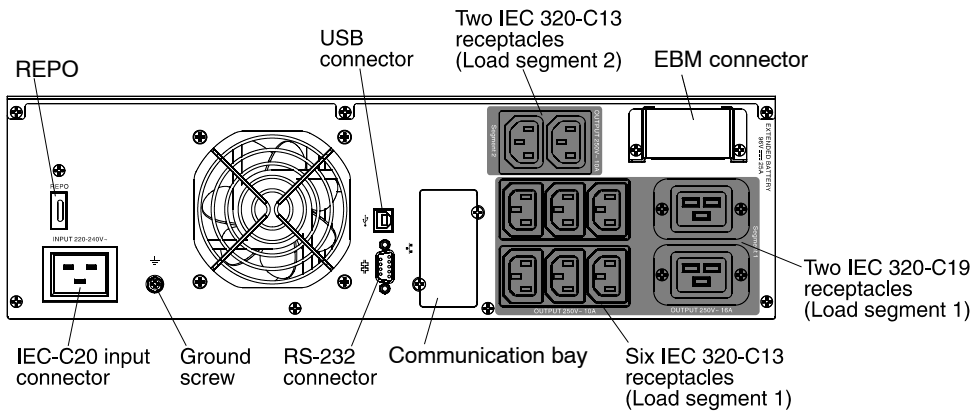


Figure 2. The 9910-E36 UPS Rear Panel

Replacing an EBM

Follow the steps in this section if you are replacing an existing, installed EBM with a new EBM. If you are installing a new UPS or EBM, continue to “Rack Installation and UPS Internal Battery Connection” on page 22.



NOTE *DO NOT DISCONNECT the batteries while the UPS is in Battery mode.*

An EBM can be replaced easily without turning the UPS off or disconnecting the load.

If you prefer to remove input power to replace the EBM:

1. Press and hold the on/off button until the long beep ceases (approximately 3 seconds), and then disconnect the UPS.
2. Wait 60 seconds while the internal processor shuts down before you disconnect the EBM.

To replace an EBM:

1. Remove the EBM connector cover and screws [2] securing the EBM power cord to the UPS. Retain the cover and screws.
2. Unplug the EBM power cord from the UPS.
3. Replace the EBM. See the recycling information in the User's Guide for proper disposal.
4. Remove the two screws from the metal cover that protects the end of the new EBM power cord. Remove the metal cover. See Figure 3.

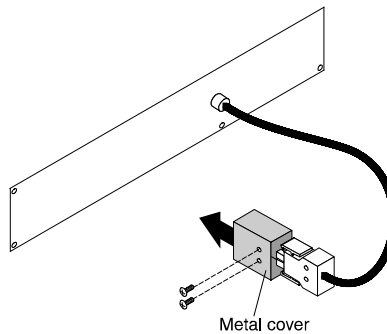


Figure 3. Removing the EBM Power Cord Cover

5. Align the EBM power cord with the EBM connector on the UPS. Firmly press the power cord into the UPS. See Figure 4.



NOTE A small amount of arcing might occur when you connect the EBM to the UPS. This is normal and does not damage the unit or present any safety concern.

6. To provide strain relief and a secure connection for the EBM power cord, reinstall the EBM connector cover [1] and screws [2] that you removed in Step 1. See Figure 4.

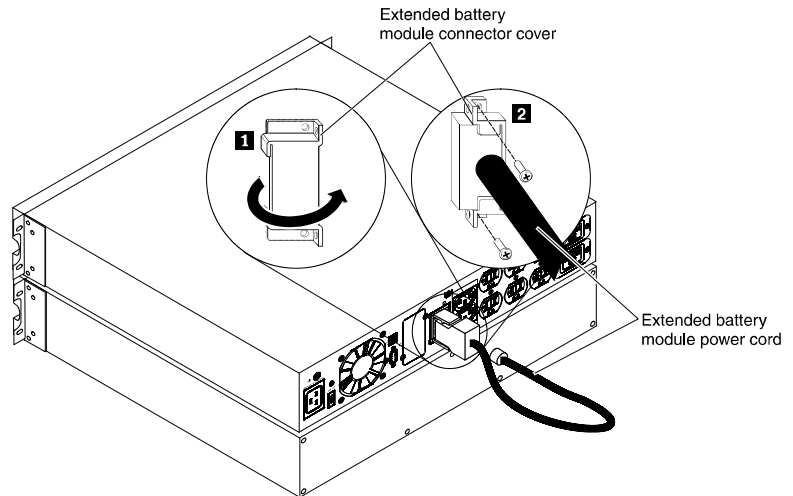


Figure 4. Connecting the EBM

Rack Installation and UPS Internal Battery Connection



NOTE If the UPS is pre-installed in a rack, you must first remove the protective shipping bracket installed on the front of the UPS. See “Removing the Shipping Bracket from the UPS” on page 38, then continue to Step 19 on page 27 to connect the internal batteries.

To install a UPS or EBM in a rack cabinet:

1. If your rack has round holes, continue to Step 2. Otherwise, skip to Step 6.
2. Locate the four adapter plates that come in the rail kit.
3. Peel off the covering that protects the adhesive side of one adapter plate, as shown in Figure 5.

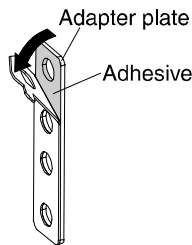


Figure 5. Removing the Adapter Plate Adhesive

4. Align the adapter plate holes with the holes on one end of a rail. Press firmly to adhere the adapter plate to the end of the rail, as shown in Figure 6.

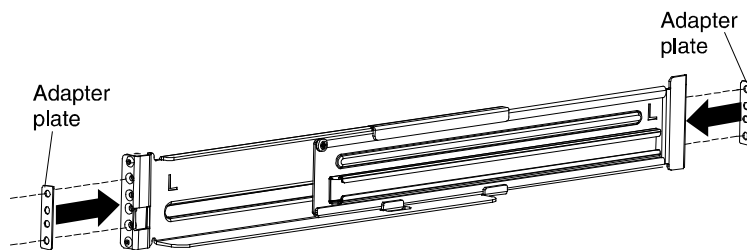


Figure 6. Attaching the Adapter Plates

5. Attach the remaining three adapter plates to the rails.

6. Loosen the rail adjustment screw and adjust the left and right rail length to the depth of the rack cabinet, as shown in Figure 7.

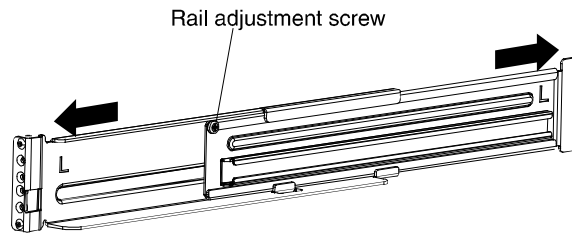


Figure 7. Adjusting the Rail Length

7. Select a location in the the rack cabinet for the UPS or EBM.
8. Secure each rail to the front of the rack with two M5×16 mm screws. Verify that the rails are on the inside of the rack-cabinet mounting flanges, and that the **L** (Left) or **R** (Right) letter on each rail faces inside the rack. See Figure 8.

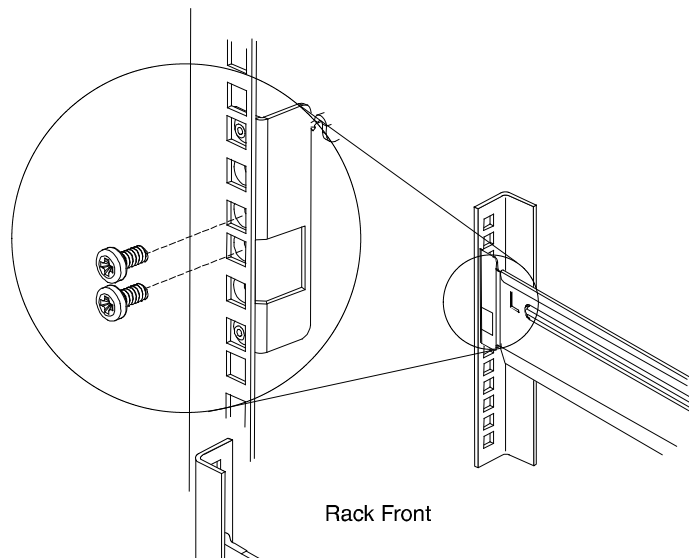


Figure 8. Attaching the Fronts of the Rails

- Secure each rail to the rear of the rack with four M5 × 16 mm screws, as shown in Figure 9.

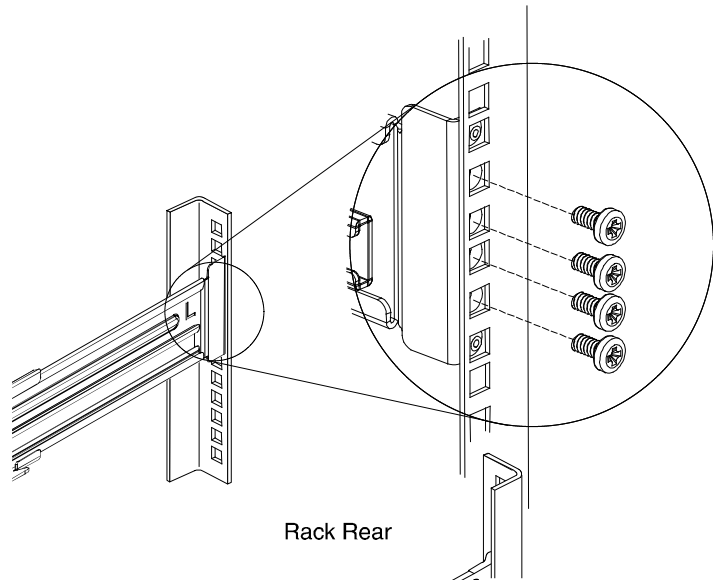


Figure 9. Attaching the Rears of the Rails

- Tighten the rail adjustment screw in the middle of each rail.
- If you are installing a UPS, continue to Step 12. If you are installing an EBM, skip to Step 15.

12. Loosen the thumbscrew on the UPS metal battery cover [1], slide the cover to the right [2], and open the cover [3].

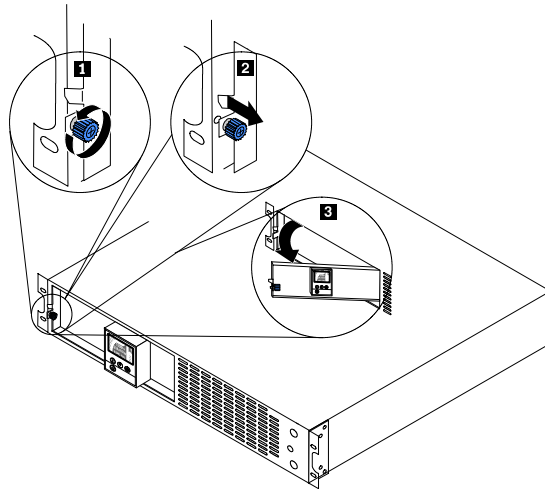


Figure 10. Opening the UPS Battery Cover

13. Move both internal battery connectors out of the way [1]. Using the plastic tabs, pull the battery partially out of the bay [2]. Pull the battery fully out of the bay and place it on a sturdy, flat surface.

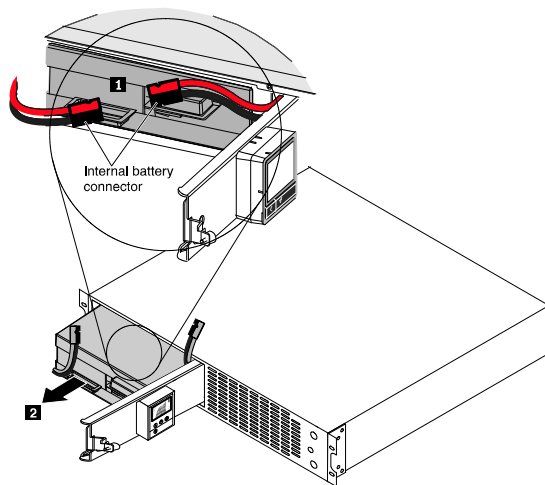


Figure 11. Removing the UPS Internal Battery

14. Close the UPS metal battery cover [1], then slide the cover slightly to the right [2] and then to the left [3]. Tighten the thumbscrew [3]. Torque the screw to 0.7 Nm (6.2 lb in) if using a torque wrench.

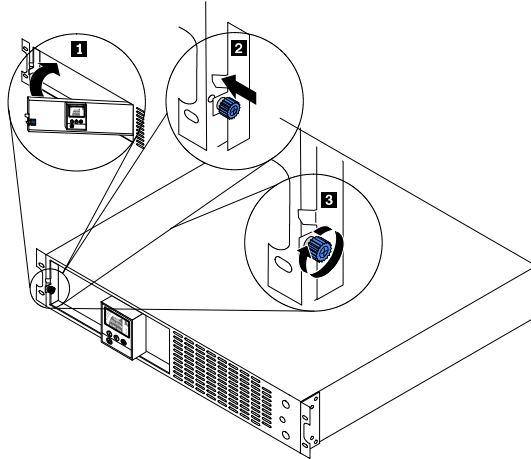


Figure 12. Closing the UPS Battery Cover

15. Align the rear hold down brackets on the sides of the UPS or EBM with the inner rails. Carefully slide the UPS or EBM into the rack cabinet. See Figure 13.

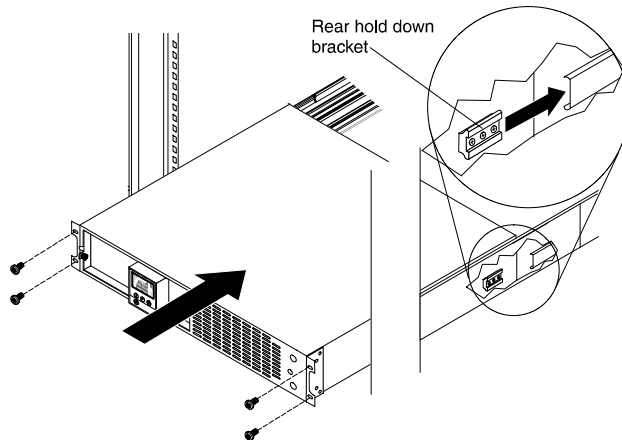


Figure 13. Installing the Cabinet in the Rack

16. Secure the front of the UPS or EBM to the rack cabinet with four M5×16 mm screws, as shown in Figure 13.
17. If the rack cabinet has conductors for grounding or bonding of ungrounded metal parts, connect the ground cable (purchased separately) to the ground bonding screw on the rear of the UPS or EBM.
18. If you are installing a UPS, continue to Step 19. If you are installing an EBM, skip to Step 22.
19. Loosen the thumbscrew on the UPS metal battery cover [1], slide the cover to the right [2], and open the cover [3].

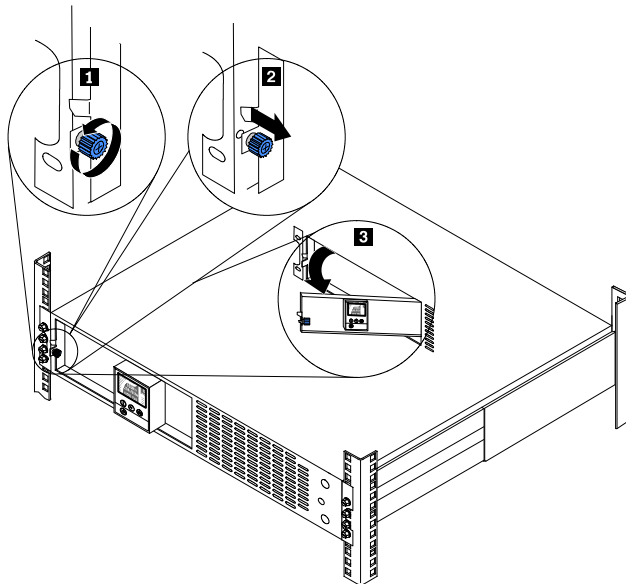


Figure 14. Opening the Battery Cover

- 20. Carefully slide the battery [1] into the UPS (if not already installed) and connect the internal battery connector [2].



NOTE A small amount of arcing might occur when you connect the batteries. This is normal and does not damage the unit or present any safety concern. Push the two connectors together firmly until fully seated.

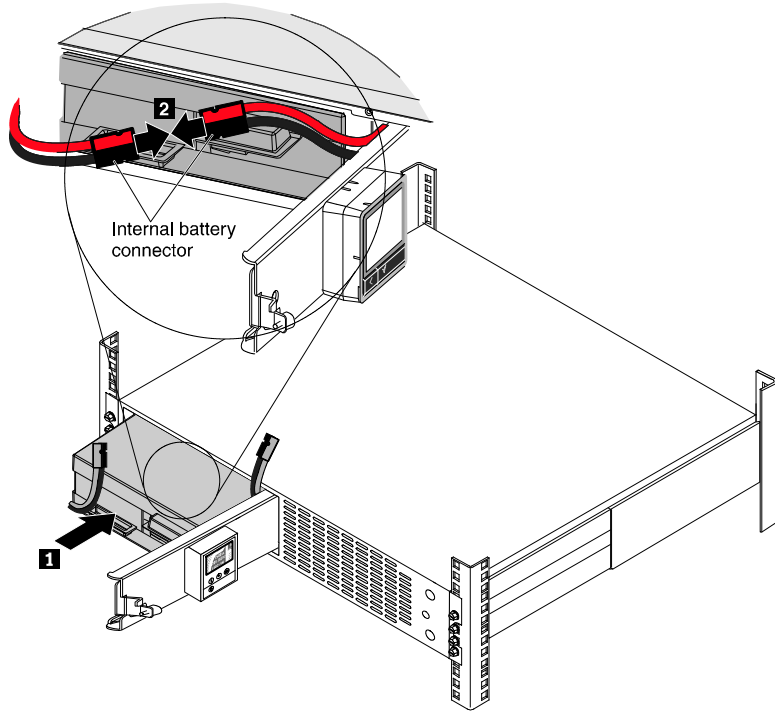


Figure 15. Installing and Connecting the Internal Batteries

- 21.** Close the metal battery cover [1], then slide the cover slightly to the right [2] and then to the left [3]. Tighten the thumbscrew [3]. Torque the screw to 0.7 Nm (6.2 lb in) if using a torque wrench.

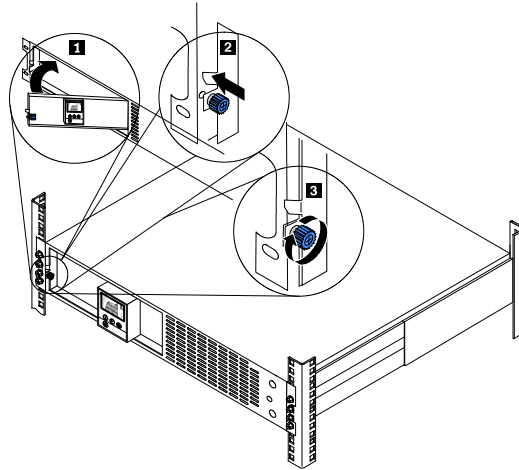


Figure 16. Closing the Battery Cover

- 22.** Locate the front cover that comes with the UPS or EBM. Press the two side latches toward each other, align the cover with the UPS, and snap it into place.

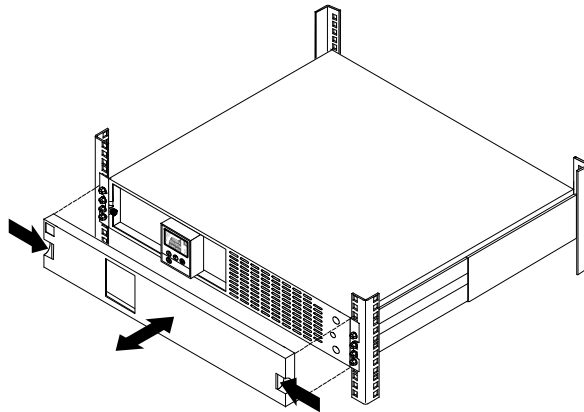


Figure 17. Installing the UPS Front Cover

- 23.** Remove the clear protective film that covers the liquid crystal display (LCD) on the front of the UPS.

Connecting the EBM



NOTE You can connect only one EBM to the UPS.

To connect an EBM to the UPS:

1. Remove the two screws from the metal cover that protects the end of the EBM power cord. Remove the metal cover. See Figure 18.

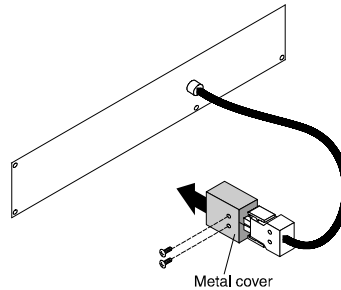


Figure 18. Removing the EBM Power Cord Cover

2. Remove the battery connector cover from the rear panel of the UPS. Keep the cover and screws for possible future use.



NOTE If the UPS is stored or used without an EBM, install the battery connector cover as a safety precaution.

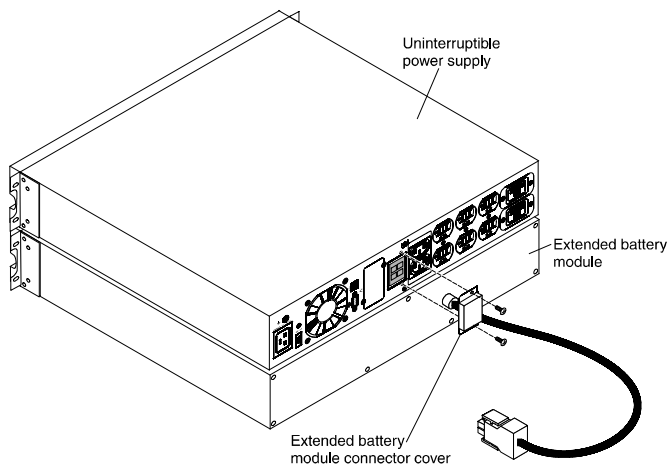


Figure 19. Removing the Battery Connector Cover

3. Align the EBM power cord with the EBM connector on the UPS. Firmly press the power cord into the UPS.



NOTE A small amount of arcing might occur when you connect the EBM to the UPS. This is normal and does not damage the unit or present any safety concern.

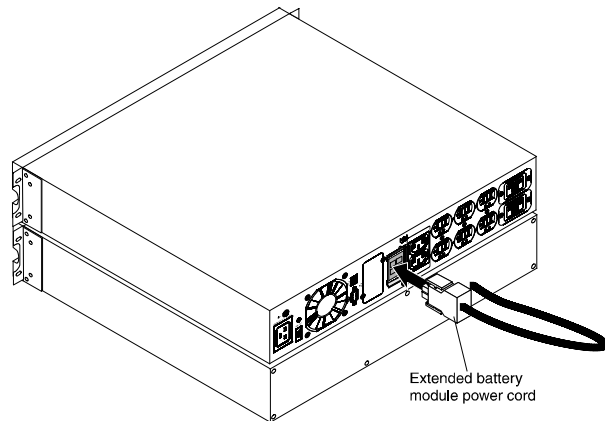


Figure 20. Connecting the EBM

4. To provide strain relief and a secure connection for the EBM power cord, rotate the battery connector cover on its side and position it under the EBM power cord [1].

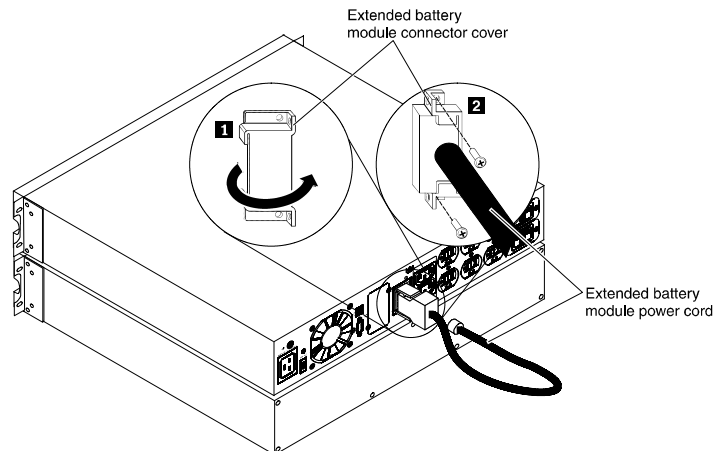


Figure 21. Connecting the EBM

5. Secure the battery connector cover to the UPS rear panel by using the screws [2] that you removed in Step 2 on page 30.

Remote Emergency Power-off (REPO)

An emergency power-off (disconnect) switch may be required by local codes.



NOTE For Europe, the emergency switch requirements are detailed in Harmonized document HD-384-48 S1, "Electrical Installation of the Buildings, Part 4: Protection for Safety, Chapter 46: Isolation and Switching."

About REPO

The UPS includes a REPO connector that lets you turn off power at the UPS output receptacles from a customer-supplied switch in a remote location. For example, you can use this feature to shut down the load and the UPS by thermal relay, in the event of a room overtemperature condition. When a REPO is activated, the UPS shuts down the output and all its power converters immediately. The UPS logic power remains on to issue an alarm.

The REPO feature shuts down the connected devices immediately and does not follow the orderly shutdown procedure that is initiated by any power-management software.

Any devices that are operating on battery power are also shut down immediately. When the REPO switch is reset, the connected devices will not return to battery power until the UPS is restarted manually.

Installing REPO

To install the remote emergency power-off (REPO) switch:

1. Verify that the UPS is turned off and all external cables and power cords are disconnected.
2. Verify that the REPO connector installed on the rear of the UPS has its jumper installed, as shown in Figure 22.

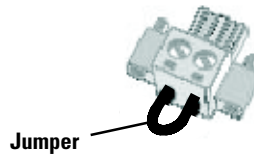


Figure 22. REPO Connector

3. Connect the switch or circuit to the REPO connector on the rear of the UPS using insulated size 18–20 AWG (0.75 mm² – 0.5 mm²) wire.

Table 11. REPO Connections

Wire Function	Terminal	Wire Size Rating	Suggested Wire Size
REPO	L1	4–0.32 mm ² (12–22 AWG)	0.82 mm ² (18 AWG)
	L2		



NOTE A separate contact must simultaneously cause UPS input AC power to be removed.

4. The REPO contacts are closed by default and cannot be changed.
The pins must be kept closed to keep the UPS running. If the UPS shuts down because the REPO connector pins are opened, restart the UPS by shorting the REPO connector pins and turning on the UPS manually. Maximum resistance in the shorted loop is 10 ohm.
5. Verify that the externally connected REPO switch is not activated. An activated REPO switch disables power to the UPS receptacles.



NOTE To avoid accidental load loss, always test the REPO function before you apply your critical load.

Initial Startup

To start the UPS for the first time:

1. Verify that the following installation procedures are completed:
 - The internal batteries are connected.
 - If an optional EBM is installed, the EBM is connected to the UPS.
 - The power input to the UPS has adequate upstream overcurrent protection (see "Safety Warnings" on page 5).
2. Connect the detachable UPS power cord to the input connector on the UPS rear panel.

See "UPS Rear Panels" on page 19 for the location of the input connector on your model.

3. Connect the UPS power cord to a power outlet.

The UPS front panel display is illuminated. The Eaton startup screen changes to the UPS status summary screen. Standby status is displayed on the front panel of the UPS.

Figure 24 on page 39 describes the display buttons.

4. Press the on/off button on the UPS front panel.

After the startup is complete, the status changes according to the UPS operating mode.



NOTE *At initial startup, the UPS sets system frequency according to input line frequency (input frequency auto sensing is enabled by default). After initial startup, auto sensing is disabled until you manually enable it by using the output frequency setting.*

NOTE *Battery start is automatically enabled after one power cycle.*

NOTE *Site Wiring Fault is disabled by default.*

5. Press the down (▼) button to check for active alarms or notices. Resolve any active alarms before you continue. For more information, see the Troubleshooting chapter in the User's Guide.
6. To set the time and date, configure the UPS for an installed EBM, or change other factory-set defaults, see "Operation" on page 39.

7. If you installed an optional REPO switch, verify that the function is working correctly by performing the following tests:
 - Activate the external REPO switch. Verify that the status changes on the UPS are displayed.
 - Deactivate the external REPO switch and restart the UPS.
8. Charge the batteries. With load, the internal batteries charge to 90% capacity in less than 4 hours. However, you must charge the batteries for 48 hours after installation or long-term storage.
9. Connect the devices that you want to protect to the applicable UPS output receptacles. **Do not turn on the devices.** For information about using load segments, see “Load Segments” on page 42.



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

10. To prevent a UPS overload condition, turn on one connected device at a time and verify that each device starts up completely before turning on the next device.
11. To install a communication option, see “Communication Features” on page 41.

Chapter 4 Shipping the UPS in a Rack

The procedures in this chapter apply to a UPS that is shipped assembled in a rack cabinet.

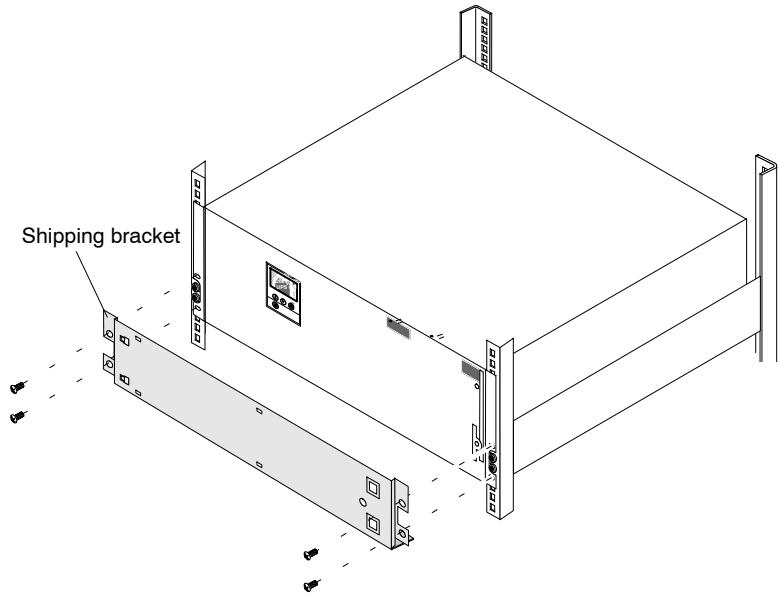


Figure 23. Shipping Bracket

Installing the Shipping Bracket on the UPS

You must install the shipping bracket on the front of the UPS before the UPS is shipped installed in a rack cabinet. The shipping bracket provides extra protection for the UPS during shipment.

To install the shipping bracket:

1. If the UPS front cover is installed, remove the cover. Press the two side latches toward each other to release the cover, and pull the cover away. Keep the cover.
2. If not already disconnected, disconnect the UPS internal batteries.

3. Remove the four screws that secure the front of the UPS to the rack cabinet. Keep the four screws.
4. Align the shipping bracket with the front of the UPS, with the support lip under the UPS. See Figure 23.
5. Secure the shipping bracket and the UPS to the rack cabinet with the four screws that you removed in Step 3, as shown in Figure 23.
6. To attach the front cover, press the two side latches toward each other, align the cover over the shipping bracket and snap into place.

Removing the Shipping Bracket from the UPS

If the UPS was shipped installed in a rack cabinet, a shipping bracket is installed to provide extra protection for the UPS during shipment. Before using the UPS, remove the shipping bracket on the front of the UPS.

To remove the shipping bracket:

1. If the UPS front cover is installed, remove the cover. Press the two side latches toward each other to release the cover, and pull the cover away. Keep the cover.
2. Remove the four screws that secure the shipping bracket and the UPS to the rack cabinet. Keep the four screws. See Figure 23.
3. Remove the shipping bracket and save it in case you have to ship the UPS in the rack cabinet in the future.
4. Secure the front of the UPS to the rack cabinet with the four screws that you removed in Step 2.
5. Connect the UPS internal batteries, if appropriate to your installation process. See Step 19 on page 27 for detailed instructions.
6. To attach the front cover, press the two side latches toward each other, align the cover over the front of the UPS and snap into place.

Chapter 5 Operation

This section describes basic operations. For detailed procedures, see the User's Guide.

Control Panel

Figure 24 shows the display and controls on the front of the UPS.

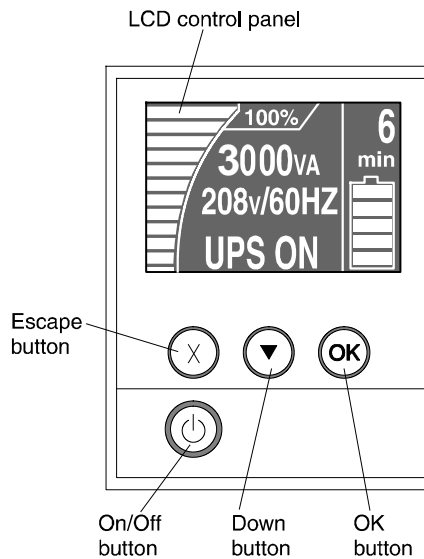


Figure 24. Eaton 9910 Control Panel

The front panel has three control buttons and one on/off button.

- **Escape (X).** Press to return to the previous menu without running a command or saving any changes.
- **Down (▼).** Press to scroll down to the next menu option. Holding down this button provides faster scrolling on some menus.
- **OK.** Press to select the current menu or option.
- **On/off.** Press to turn on the UPS. Press and hold for 3 seconds to turn off the UPS.

Turning on the UPS

To turn on the UPS, press the on/off button for approximately 1 second. The display changes from the start screen to the UPS Status Summary screen and shows the Standby icon flashing while the UPS starts.

Starting the UPS on Battery



NOTE Before you use this feature, the UPS must have been powered by utility power at least once.

To turn on the UPS without using utility power, press and hold the on/off button for 3 seconds. The UPS provides power to the connected devices, and it switches into Battery mode.

Turning off the UPS

To turn off the UPS:

1. Prepare the connected devices for shutdown.
2. Press and hold the on/off button until the long beep ceases (approximately 3 seconds). The UPS transfers to Standby mode (if utility power is available) and removes power from the connected devices.
3. Disconnect the UPS from the power source; otherwise, it remains in Standby mode. After the power source is removed, the UPS shuts down fully in 10 seconds.

Display Functions

The UPS provides information about the load status, events, measurements, identification, and settings through the front panel display.

While any screen is displayed, press the escape (X) button until the main menu is displayed, and then press the down (▼) button to scroll through the main menu choices.

Press the OK button to select a menu item.

Chapter 6 Communication Features

The Eaton 9910 UPS includes UPS Manager software, a USB port, an RS-232 port, and a communication bay. Each UPS has two load segments.

For more information about the communication features, refer to the User's Guide.

UPS Manager Software

The UPS comes with the UPS Manager software. The management software provides up-to-date graphics of UPS power and system data and power flow. It also gives you a complete record of critical power events, and it notifies you of important UPS or power information. If there is a power outage and the UPS battery power becomes low, the software can automatically shut down the system to protect the data before the UPS shutdown occurs.

You can install the UPS Manager software on a computer running a Microsoft® Windows®, Linux®, or AIX® operating system, as either a standalone application or part of a network.

Communication Ports

The UPS has a USB port and an RS-232 port that you can use for UPS monitoring, control, and firmware updates. After communication is established between the UPS and a computer, you can use the UPS Manager software to exchange data between the UPS and the computer. The software polls the UPS for detailed information about the status of the power environment. If a power emergency occurs, the software initiates the saving of all data and an orderly shutdown of the devices that are connected to the UPS.

For the communication port locations, see “UPS Rear Panels” on page 19.



NOTE *Only one of the communication ports can be active at one time. The USB port has priority over the RS-232 port.*

Communication Cards

Communication cards allow the UPS to communicate in a variety of networking environments and with different types of devices. The optional card must be purchased separately.



NOTE *You do not have to shut down the UPS to install an optional communication card.*

The Eaton 9910 has an available communication bay for one of the following communication cards:

- **Network Management Card.** Provides power management software to control load segments, set the time and date, configure other settings, and update the UPS firmware.
- **Relay-Serial Card.** Provides two types of interfaces through a DB-9 connector: a dry contact (relay) mode and an RS-232 (serial) mode.

For information about installing, configuring, and using an optional card, refer to the card's user guide for more information.



NOTE *To use the Relay-Serial Card with IBM servers, leave the jumpers in the default position (middle of the card).*

Load Segments

Load segments are sets of receptacles that can be controlled by power management software, providing an orderly shutdown and startup of your equipment. For example, during a power outage, you can keep key pieces of equipment running while you turn off other equipment. This feature allows you to save battery power. See the User's Guide or your power management software manual for details.

Each UPS has two load segments as shown in "UPS Rear Panels" on page 19.

Chapter 7 Service and Support

Updating the UPS Firmware

To keep the UPS firmware updated with the latest improvements and benefits, visit www.eaton.com/IBM often for updates. You can download the latest firmware version. The downloadable file includes the instructions for installing the update.

Contacting Service

In the United States and Canada, call the **IBM Service Support Center at 800-IBM-SERV (800-426-4968)**. In Europe, the Middle East, and Africa (EMEA); Latin America; or Asia-Pacific, call the **IBM office** that services your account.

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

Comments

We welcome your comments about this manual. Please send your questions or suggestions for improvements to IBMSupport@eaton.com.



P-16400006 1