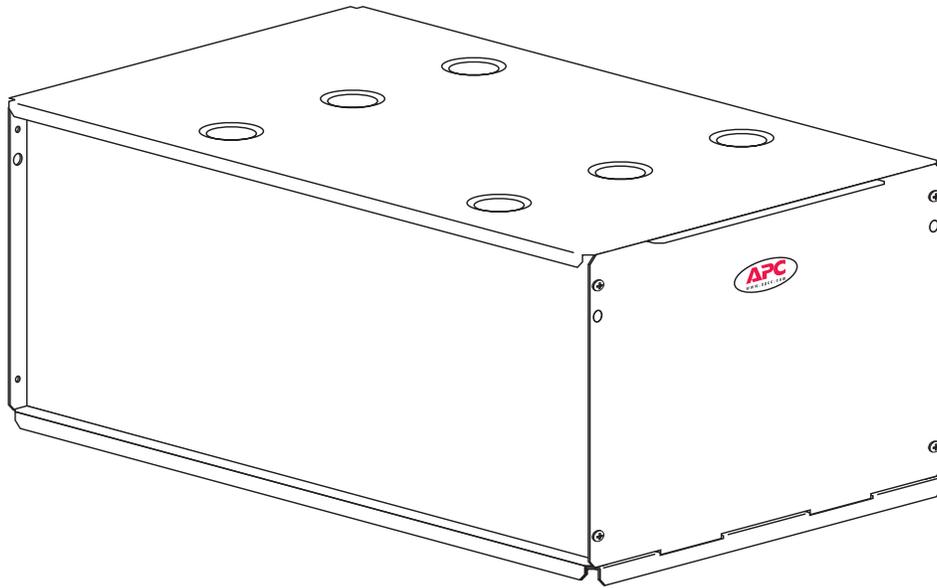


UXBP Battery Pack

Model: UXBP48M



Installation Instructions

1. Introduction

The UXBP48M is a large Battery Pack module designed to be used with a Matrix-UPS system to provide a significant increase in on-battery runtime for your protected equipment.

For complete information on the Matrix-UPS system, refer to the Owner's Manual that came with your UPS.

Note: *If you are installing your Matrix-UPS system for the first time, be sure to read the Matrix-UPS Owner's Manual first. Set up your UPS system before installing the UXBP48M.*

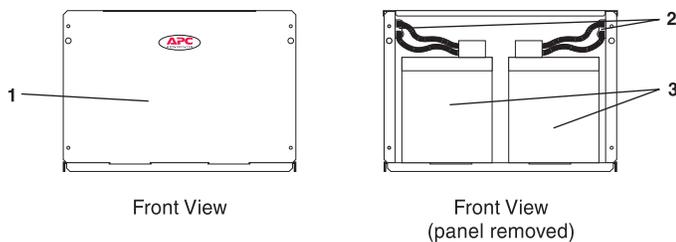
2. Safety!

CAUTION!

- Use the UXBP48M only with a UPS that is properly installed according to the UPS Owner's Manual and connected only to a two-pole, three-wire grounding mains receptacle. The receptacle must be connected to appropriate branch protection (fuse or circuit breaker). Connection to any other type of receptacle may result in a shock hazard and may violate local electrical codes.
- Avoid installing the UXBP48M in locations where there is water or excessive humidity.
- Do not allow water or any foreign object to get inside the UXBP48M. Do not put objects containing liquid on or near the unit.
- To reduce the risk of overheating the UXBP48M, avoid exposing the unit to the direct rays of the sun. Avoid installing the unit near heat emitting appliances such as a room heater or stove.
- Do not move the UXBP48M with its batteries installed. Doing so may result in damage to the Battery Pack and/or a shock hazard.
- Install only factory-authorized batteries in the UXBP48M. Improper batteries may result in a hazardous chemical spill and/or a shock hazard.

3. Presentation

3.1 UXBP48M front



UXBP48M Battery Pack

The UXBP48M contains four user-replaceable, sealed lead-acid batteries and the associated cables and connectors.

1. Front panel/Battery door

The front panel of the Battery Pack provides access for battery installation and replacement. Refer to Section 4 when installing or replacing batteries.

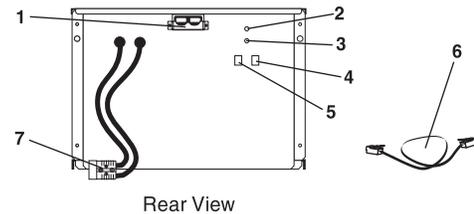
2. Battery internal coupler

These four couplers connect the UXBP48M's replaceable internal batteries. See Section 4.

3. Batteries

The Battery Pack contains four nominal 12 Vdc sealed lead-acid batteries. *Use only factory-authorized batteries in the UXBP48M!*

3.2 UXBP48M rear



1. Battery Pack rear panel coupler

Additional UXBP48M Battery Packs are connected to this coupler. Refer to Section 4.5 for information on making connections with this coupler.

2. Replace Battery indicator

This indicator lights when the Battery Pack can no longer sustain a charge. Refer to Section 7 if this indicator is lit.

3. Reset button

This button resets the Battery Pack. The Battery Pack must be reset after batteries are installed or replaced.

4. Input Battery communications jack

This connector accepts battery signals from the Output of another Battery Pack in the system. No connection is made to this jack in a single Battery Pack installation.

5. Output battery communications jack

The Battery Pack sends status signals to the UPS or to the Input of another Battery Pack (in a multiple Battery Pack application) from this connector.

6. Battery Communications Cable

Each Battery Pack is supplied with a battery communications cable.

7. In-line Battery Pack coupler

This coupler connects the Battery Pack to the UPS or to the rear panel coupler on another matching Battery Pack.

4. Installation

4.1 Receiving inspection

When you remove the UXBP48M from its shipping container, inspect it for damage that may have occurred in transit. Immediately notify the carrier and place of purchase if any damage is found. The packing materials are made from recyclable materials and should be saved for reuse or disposed of properly.

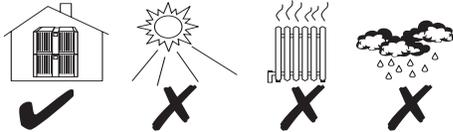
4.2 Moving the UXBP48M

The UXBP48M and its batteries are heavy and should be moved on the original shipping pallet using a fork-type hand truck, or separately on a hand truck. *Never move the Battery Pack while its batteries are installed!*

Warning: *Do not move the UXBP48M with its internal batteries installed! Doing so could result in severe physical damage to the Battery Pack and cause a shock hazard.*

4.3 Placement

The UXBP48M may be installed in any protected environment that is suitable for the UPS. Refer to the Owner's Manual that came with the UPS.



Identify a location convenient to the UPS with enough room in front of and behind the unit for servicing. There should be at least 30.5 cm (1 ft) clearance behind the UXBP48M. Leave enough clearance in front that you can comfortably access the battery compartment.

Caution: *Do not stack more than 4 UXBP48M battery packs on top of each other. Do not place UXBP48M battery packs on top of other components of the Matrix-UPS system. Damage to the UPS could result.*

4.4 Unpacking and Installation

The UXBP48M is shipped with the cabinet secured to the shipping pallet and its batteries unconnected. You must unpack the batteries and unbolt the cabinet from the pallet before you can use your Battery Pack. *Use only factory-authorized batteries in the Battery Pack!*

Move the pallet containing the Battery Pack to the desired operating location before installing the batteries (see Section. 4.3). *Do not move the Battery Pack with the batteries installed!*

4.4.1 Warning

It is important that you read and understand the following warnings and cautions before installing the batteries in the UXBP48M.

- Only personnel familiar with the dangers of batteries and the required precautions should perform or supervise battery replacement. Keep unauthorized personnel away from batteries. Replace batteries with the same number and type of sealed lead acid batteries as originally installed in your UXBP48M.
- **WARNING** — Use only factory-authorized *sealed* batteries in the Battery Pack. Use of unsealed batteries may result in a hazardous chemical spill.
- **CAUTION** — Do not dispose of batteries in a fire. The batteries may explode.
- **CAUTION** — Do not open or mutilate batteries. They contain an electrolyte which is toxic and harmful to the skin and eyes.
- **CAUTION** — A battery can present a risk of *electrical shock* and *high short circuit current*. When replacing batteries, remove wrist watches and jewelry such as rings. Use tools with insulated handles.
- **The batteries in this UPS are recyclable. Recycle the batteries properly. The batteries contain lead and pose a hazard to the environment and human health if not recycled properly. Refer to local codes for proper recycling requirements or return the battery to a factory authorized Service Center.**

4.4.2 Unpacking the Battery Pack

To unpack the UXBP48M, follow the procedure outlined below.

1. Remove the five (5) phillips screws securing the battery door/front panel to the Battery Pack.
2. Tilt the battery door/front panel forward, then lift it away from the cabinet.
3. Remove each of the batteries and all corrugated packing material from inside the cabinet. Remove the corrugated sleeves from the batteries.

Warning! *Do not connect the batteries together.*

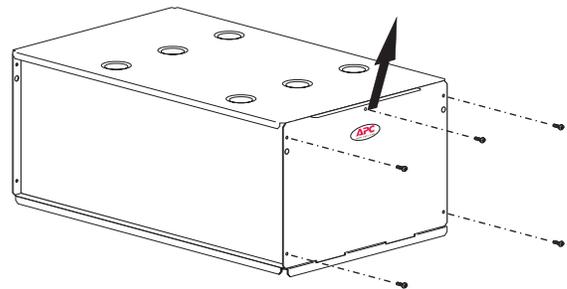
Note: *For safety reasons, it is important that all packing material be removed from the interior of the cabinet.*

4. On the outside of the cabinet there are four (4) 1/4-20 screws that secure the cabinet to the shipping pallet. Use a phillips screwdriver to remove these four (4) screws.
5. Move the empty cabinet to its permanent location.
6. Proceed to Section 4.4.3, Step 3 to complete the battery installation.

4.4.3 Battery installation and replacement

To install the batteries, follow the procedure outlined below.

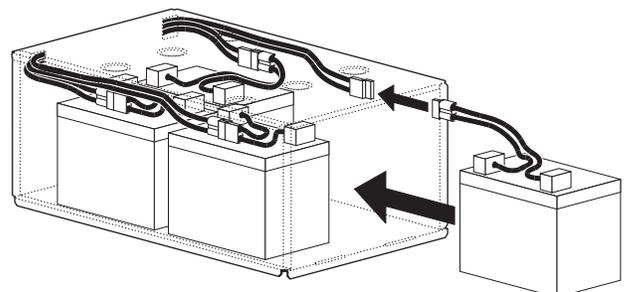
1. Remove the five (5) phillips screws securing the battery door/front panel to the Battery Pack.
2. Tilt the battery door/front panel forward, then lift it away from the cabinet.



3. Position the batteries on the floor in front of the cabinet. The terminals should be up and to the center of the cabinet. Note the yellow couplers (4) located inside the cabinet, one for each battery.
4. Select a battery and, using firm pressure, slide the battery all the way to the rear of the cabinet.
5. Connect the battery's coupler to the matching coupler located on the cabinet wall.

Warning! *Do not connect the couplers mounted to the cabinet together.*

6. Select the second battery and move it into place. Slide the second battery all the way to the rear of the cabinet beside the first battery.



7. Connect the second battery's coupler to the matching coupler mounted on the side of the enclosure and route the battery cable over the top of the battery.

Warning! Do not connect the batteries together.

8. Repeat steps 5 through 7 for the front battery pair.
9. Refer to Section 4.4.4 for **Test Instructions** before replacing the battery door/front panel.

4.4.4 Installing and Replacing Batteries: Test Instructions

Before coupling the UXBP48M to a Matrix-UPS or another battery pack, a test must be performed to insure that the batteries have been properly installed within the cabinet. A DC voltmeter is required to perform this simple test. **Warning! Do not install the UXBP48M until this test procedure has been performed.**

1. Locate the blue coupler at the end of the DC power bus cable (See item 2 in Section 3.2).

2. Measure the DC voltage across the two conductors in the coupler.

Warning! Care must be taken not to short circuit the coupler with the test leads.

3. Refer to the following table for the status of the UXBP48M:

Table 2 - UXBP48M Battery Pack Voltage

Battery Pack Voltage	Battery Pack Status
45.0 Vdc - 57.0 Vdc	Ready to Install
0.0 Vdc - 45.0 Vdc	Miswired or Bad Battery

4. When the Battery Pack Status is "Ready to Install," complete the final steps of the installation. If the Battery Pack Status is "Miswired or Bad Battery," disconnect the internal battery connections. **Do not connect the UXBP to any other equipment.** Review the Installation and Test Procedures and if necessary contact APC's Technical Support for additional help with the installation and troubleshooting. When calls are placed to the Technical Support Line please have the following information ready when the representative answers:

1. The UXBP48M's serial number.
2. The battery pack voltage measured at the blue coupler.
3. Each of the individual battery voltages.

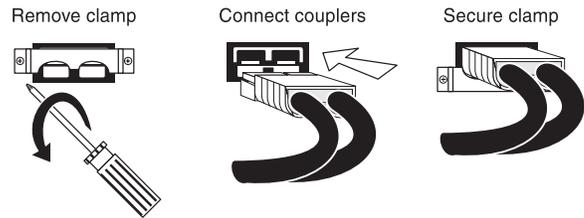
4.4.5 Final Installation

When the correct battery voltage has been verified, perform the following steps to complete the battery installation.

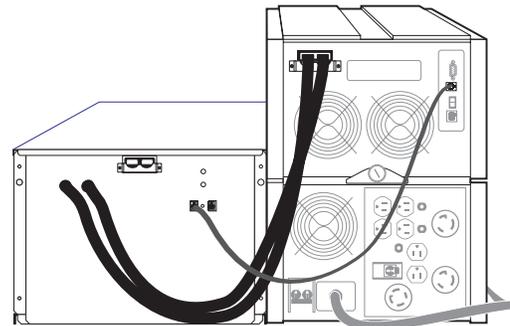
1. Replace the battery door/front panel and reinstall the five (5) phillips screws that were removed in Step 1.
2. Connect the UXBP48M's blue DC coupler to the UPS or to another matching battery pack (if desired). This procedure is described in Section 4.5

4.5 Module interconnections

After you have positioned the Battery Pack and installed the batteries, you can connect the Battery Pack to the UPS or to other Battery Packs in the system. Refer to the following instructions to properly install the battery pack couplers.



1. Use a phillips screwdriver to remove the battery pack coupler clamps from the UPS and from all but the last Battery Pack.
2. Connect the blue battery pack couplers as shown. *Do not attempt to connect the blue battery pack couplers with the yellow battery couplers inside the UXBP48M.*
3. Fasten the battery pack coupler clamp to secure the couplers in place.
4. Repeat for any additional Battery Packs.
5. Next, plug one end of the battery communications cable into the OUTPUT jack on the rear of the Battery Pack.
6. Plug the other end of the cable into either the UPS's BATT COMM input jack, or into the INPUT jack of another Battery Pack.



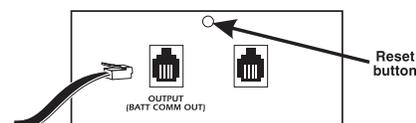
7. In a similar manner, connect any remaining Battery Packs. Always connect the INPUT of a Battery Pack to the OUTPUT of the Battery Pack after it.

Installation of the Battery Pack is complete. Refer to the UPS's Owner's Manual for information on starting up the system.

4.4.6. Resetting the REPLACE BATTERY indicator

Whenever the batteries in the UXBP48M are replaced, The REPLACE BATTERY indicator remains lit until it is reset. Perform the following procedure to reset the indicator.

1. After replacing the batteries, disconnect the battery communications cable from the OUTPUT jack on the rear of the Battery Pack.
2. Use a pointed object such as a ballpoint pen to press *and hold* the reset button on the rear panel.
3. While pressing the reset button, reconnect the battery communications cable to the OUTPUT jack.
4. Release the reset button. The REPLACE BATTERY indicator on the rear of the Battery Pack will go out.



5. Storing the Battery Pack

The Battery Pack should be stored in a covered location and with its batteries in a fully-charged state (reports 100% capacity to the UPS).

In extended storage, use the UPS to refresh the Battery Pack every six months in environments where the temperature is -15 to +30 °C (+5 to +86 °F). Refresh the Battery Pack every three months in environments where the temperature is +30 to +45 °C (+86 to +113 °F).

6. Battery Life

6.1 Battery life

You can expect to receive three to six years of service from the Battery Pack's batteries, depending on the number of recharge cycles. When the batteries can no longer sustain a charge, the Replace Battery indicator on the rear of the Battery Pack will illuminate. Refer to Section 4 for battery replacement instructions.

7. Troubleshooting

Problem	Possible Cause	Solution
Battery Pack's REPLACE BATTERY indicator is lit.	Batteries need to be replaced.	Replace batteries. See Section 4.4.3.
	Battery Pack was not reset after battery replacement.	Reset the REPLACE BATTERY indicator. See Section 4.5.1.
UPS display reports: "No battery communications."	One or more Battery Pack communications cables are not connected properly.	Check the battery communications connections to and from each Battery Pack and the UPS. See Section 4.5.
	Processor module may be malfunctioning.	
Other problems occur.		Refer to the Troubleshooting section of the Owner's Manual that came with your UPS.

8. Specifications

7.1 Battery

Battery type:	Four spill-proof, maintenance-free, sealed lead-acid
Nominal battery pack voltage:	48 Vdc
Typical battery life:	3 to 6 years, depending on environment and use
Recharge time:	See table in Section 7.4

7.2 Environment

Operating temperature:	0 to +40 °C (+32 to +104°F)
Storage temperature:	-15 to +45 °C (+5 to +113 °F)
Operating and storage relative humidity:	0 to 95%, non-condensing
Operating elevation:	0 to 3,000 m (10,000 ft)
Storage elevation:	0 to 15,000 m (50,000 ft)

7.3 Physical

Size (H'W'D):	31.0 x 44.7 x 75.4 cm (12.2 x 17.6 x 29.7 in.)
UXBP48M weight (with batteries):	128.2 kg (282.0 lbs)
Shipping weight (with batteries):	143.6 kg (316.0 lbs)

7.4 Runtime versus load

All times are in hours. Run times are typical at 25 °C (77 °F). Figures apply to both MX3000 and MX5000 UPSs.

Run Time

Load ↓	Runtime required					
	1 hr	2 hr	3 hr	4 hr	6 hr	8 hr
1000 VA	1 UXBP48		2 UXBP48		3 UXBP48	
2000 VA	1 UXBP48	2 UXBP48		3 UXBP48	4 UXBP48	5 UXBP48
3000 VA	2 UXBP48		3 UXBP48	4 UXBP48	5 UXBP48	6 UXBP48
4000 VA	2 UXBP48	3 UXBP48	4 UXBP48	5 UXBP48	7 UXBP48	9 UXBP48
5000 VA	3 UXBP48	4 UXBP48	5 UXBP48	6 UXBP48	9 UXBP48	11 UXBP48

Recharge Time

	Number of UXBP Battery Packs					
	1	2	3	4	5	6
3000 VA UPS	3.8 hr	8.1 hr	12.5 hr	16.9 hr	21.3 hr	25.7 hr
5000 VA UPS	3.8 hr	8.1 hr	12.5 hr	16.9 hr	21.3 hr	25.7 hr

* Recharge to 90% capacity after discharge into 50% of rated full load.

Limited Warranty

American Power Conversion (APC) warrants its products to be free from defects in materials and workmanship for a period of one year from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. To obtain service under warranty you must obtain a Returned Material Authorization (RMA) number from APC or an APC service center. Products must be returned to APC or an APC service center with transportation charges prepaid and must be accompanied by a brief description of the problem encountered and proof of date and place of purchase. This warranty does not apply to equipment which has been damaged by accident, negligence, or mis-application or has been altered or modified in any way. This warranty applies only to the original purchaser who must have properly registered the product within 10 days of purchase.

EXCEPT AS PROVIDED HEREIN, AMERICAN POWER CONVERSION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

EXCEPT AS PROVIDED ABOVE, IN NO EVENT WILL APC BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF THIS PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Life Support Policy

As a general policy, American Power Conversion (APC) does not recommend the use of any of its products in life support applications where failure or malfunction of the APC product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. APC does not recommend the use of any of its products in direct patient care. APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of American Power Conversion is adequately protected under the circumstances.

Examples of devices considered to be life support devices are neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators for both adults and infants, anesthesia ventilators, and infusion pumps as well as any other devices designated as "critical" by the U.S. FDA.

Hospital grade wiring devices and leakage current may be ordered as options on many APC UPS systems. APC does not claim that units with this modification are certified or listed as Hospital Grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.

Technical Support and Customer Service

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