

3U MP2-220N POD™

USER MANUAL



*Power Output
Distribution*
**208 Volt
16 Amp**

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS



WARNING

Do not attempt to service this product yourself. Opening or removing the cover may expose you to dangerous voltages, even when the AC cord is disconnected from the electrical socket. Refer all servicing to qualified service personnel.

This manual contains important instructions that should be followed during installation and operation of the MP2-220N POD™.

This product is designed for commercial / industrial use only, with Liebert UPS systems. It is not intended for use with life support and other designated “critical” devices. Do not exceed POD or UPS rating labels.

Read all safety and operating instructions before operating the MP2-220N POD and the connected UPS system. Adhere to all warnings on the unit and in this manual. Follow all operating and user instructions.

Turn the UPS off and unplug the MP2-220N POD before cleaning. Use only a soft cloth, never liquid or aerosol cleaners.

The UPS and MP2-220N POD are designed for data processing equipment. Do not connect laser printers or appliances, such as hair dryers, heaters, vacuum cleaners, or electric drills, into a 3U POD powered by a UPS.



WARNING

Do not modify the cables in any way. The MP2-220N POD receptacles should match the UPS input plug. The MP2-220N POD must be grounded at all times while in use. Turn off the UPS before unplugging it.

The UPS and the MP2-220N POD are equipped with grounded plugs (plug types vary depending on model). Do not defeat the safety purpose of this plug. If unable to fully insert the plug into the designated socket, contact a qualified electrician or your local dealer or Liebert representative for assistance.

Install in a clean temperature-controlled, indoor area free of conductive contaminants.

Route power supply cords so they are not walked on or pinched in anyway.



CAUTION

Risk of electric shock; do not remove center cover, no user serviceable parts inside. Wire access covers may only be removed by qualified personnel. Refer servicing to qualified service personnel.



CAUTION

This device receives power from multiple sources. Before servicing this device, remove all connections and cut power from the utility branch input. Before servicing the UPS, follow “Maintenance of UPS” instructions in the user manual for your UPS.



CAUTION

This device is for use in a controlled environment. Refer to **8.0 - Specifications** on page 11 for environmental conditions.



WARNING

When the MP2-220N POD is in **UTILITY** position (maintenance bypass mode), the power to the connected load is not filtered or conditioned by the UPS. The Liebert UPS connected equipment guarantee is not valid while in this mode of operation.

GLOSSARY OF SYMBOLS



Equipment grounding conductor



Bonded to ground



Electric phase



Indicates AC input



Indicates AC output



Indicates caution followed by important instructions

1.0 INTRODUCTION AND SYSTEM DESCRIPTION

Congratulations on your choice of the Liebert MP2-220N POD™ (3U POD). The 3U POD provides maintenance bypass capability as well as power output distribution. The 3U POD can be used on UPSs in the rack mount or tower configuration.

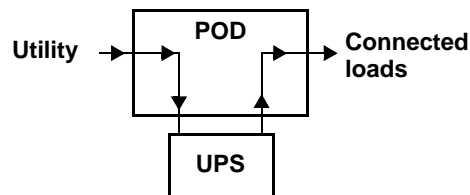
The 3U POD provides an isolated path of power for your UPS system for preventive maintenance or service. As shipped, cords and receptacles provide ready to use UTILITY and LOAD connections. Optionally, the utility input and/or the load output may be converted to hardwiring,

1.1 System Description

The 3U POD has two modes of operation: **UPS** (UPS available) and **UTILITY** (maintenance bypass).

- In **UPS mode**, the power is routed through the UPS system delivering conditioned power to the load, as shown in **Figure 1**.

Figure 1 UPS mode of operation



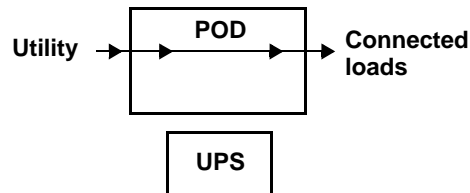
- In **UTILITY mode**, the power is routed around (bypassing) the UPS system (see **Figure 2**). Utility power is supplied directly to the load through the 3U POD.



CAUTION

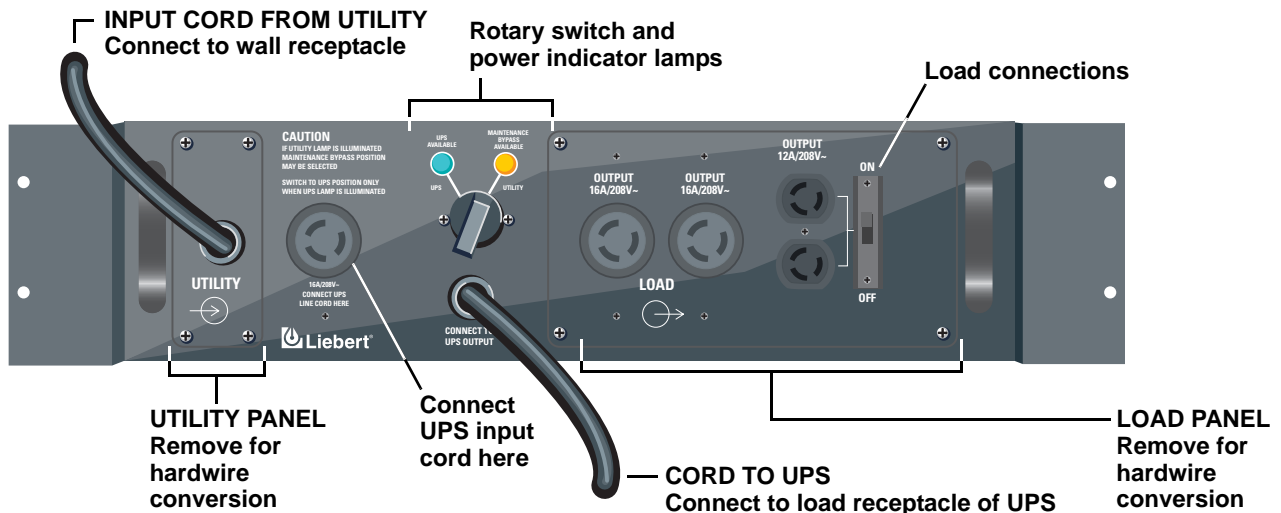
Battery back-up and conditioned power are NOT available during the UTILITY mode of operation.

Figure 2 UTILITY/maintenance bypass mode



- In Utility mode, the UPS may be turned off and removed without affecting the load. See **Figure 3**.

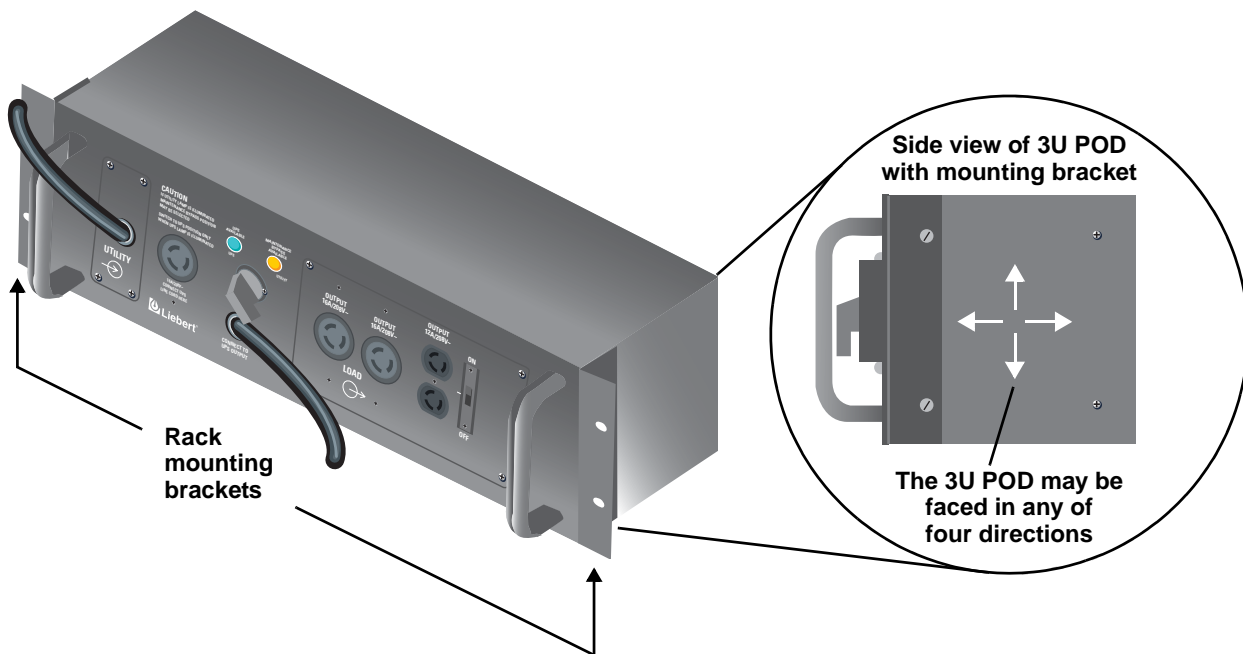
Figure 3 Front panel view showing plug-in connections to and from the UPS



2.0 RACK MOUNT INSTALLATION

1. Rack mount installation of the 3U POD is possible with the use of the rack mounting brackets (shipped with the 3U POD). See **Figure 4**.
2. The rack mounting brackets allow you to rack mount the 3U POD in a 19" enclosure (23" to 19" rack adapters would have to be purchased separately if you are using our 23" Foundation or equivalent cabinet).
3. The 3U POD can be mounted to face one of four directions depending on your application, utilizing the rack mount brackets provided.
4. Determine the desired position and direction for the 3U POD, face it in that direction, then attach the brackets to the 3U POD with the two (2) screws provided for each bracket.
5. Consult your rack/enclosure manufacturer's recommendations for specific rack mounting hardware that will be required.
6. Tighten the 3U POD securely to the rails.

Figure 4 3U POD with rack mounting brackets



3.0 INSTALLATION AND ELECTRICAL CONNECTIONS

Unpack the 3U POD carefully, noting the packing method. Retain the box and packing material for possible future shipments.

Visually inspect the 3U POD for freight damage. Report damage to the carrier and your local dealer, Liebert representative or the Liebert Worldwide Support Group.

3.1 Power Connection Options

The 3U POD may be connected to the UPS in either of two ways:

- The unit is shipped ready for connection with NEMA cords and receptacles (**Cord-Receptacle Installation**).
- Alternatively, the input and output connections may be converted to hardwire applications (**Alternate Hardwire Installation**).

Follow the instructions for the preferred installation option, as listed in **Table 1**.

Table 1 Installation options

Type of installation	Description	For installation instructions, refer to:
Cord-Receptacle Installation	As shipped, the MP2-220N is ready to connect using NEMA cords and receptacles.	3.2 - Cord-Receptacle Installation and Start-Up
Alternate Hardwire Installation	The input and output connections may be converted to hardwire applications.	4.0 - Alternate Hardwire Installation

3.2 Cord-Receptacle Installation and Start-Up



NOTE

This manual provides instructions for the 3U MP2-220N POD only. Refer to your UPS manual for UPS operation and installation instructions.

1. Verify that the 3U POD input cord, UPS input cord and receptacle for the UPS have the same type of configuration.
2. If you already have a UPS installed, turn off any connected loads and unplug them from the UPS. Turn off the UPS and disconnect the UPS input cord.
3. Make sure the 3U POD rotary switch is in the UTILITY position. Plug the 3U POD input cord (labeled "UTILITY") into the utility outlet (wall receptacle).
WARNING: The 3U POD is now electrically live. The UTILITY lamp (amber) should be illuminated.
4. Plug the UPS input cord into the receptacle on top of the 3U POD labeled "CONNECT UPS LINE CORD HERE."
WARNING: The UPS system is now electrically live.
5. Connect the second 3U POD input cord (labeled "UPS") into the matching load receptacle on the rear of the UPS.
6. Plug in all loads to the load receptacles. The 3U POD now powers your equipment in the UTILITY mode.
7. Turn ON the loads and ensure all are up and operating according to specification.
8. Start the UPS according to its specific user manual.
9. Verify that the UPS lamp (green) on the 3U POD is illuminated. If so, transfer the rotary switch from UTILITY to UPS. The load is now being supplied with conditioned power through the UPS.
10. Before any operation or procedure, always verify that both the UPS lamp (green) and the UTILITY lamp (amber) are illuminated before changing the status of the rotary switch.

4.0 ALTERNATE HARDWIRE INSTALLATION

4.1 Electrical Installation Considerations



WARNING

This unit must be installed by competent electrical personnel and wired in accordance with local/national electrical codes.

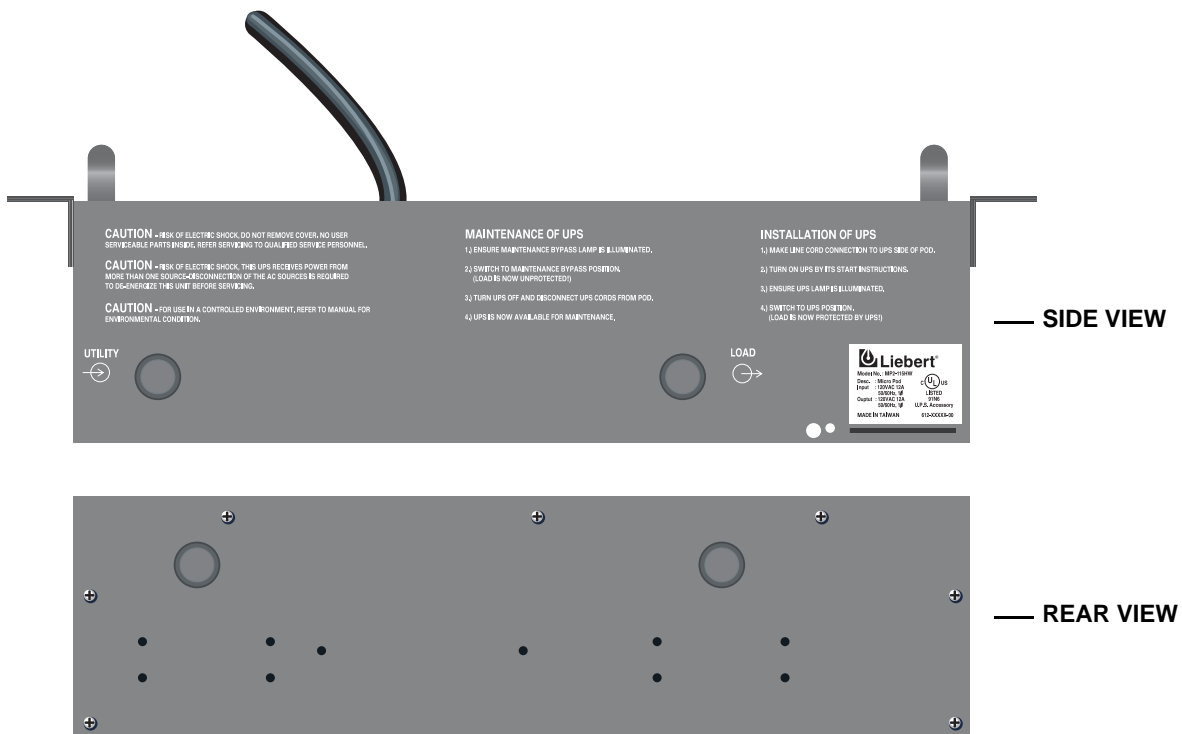
Review this entire manual and the installation instructions in this section before beginning the installation.

Before installing, open all branch circuit power at the nearest disconnect, turn the UPS off, and disconnect all cords to and from the UPS.

The utility input supply cable must be connected to the unit via a wall-mounted circuit breaker. The UPS output port must also be protected with a circuit breaker connected to the load, rated to carry the input current, and be capable of breaking the maximum prospective short circuit current of this branch circuit. The breaker must be mounted within six feet of the UPS and be readily accessible to the operator. Please refer to **Table 2** for breaker specifications.

4.1.1 Conduit Entry and Wiring Access Doors

The side and rear of the 3U POD provide alternate conduit entry points for both UTILITY and LOAD connections.



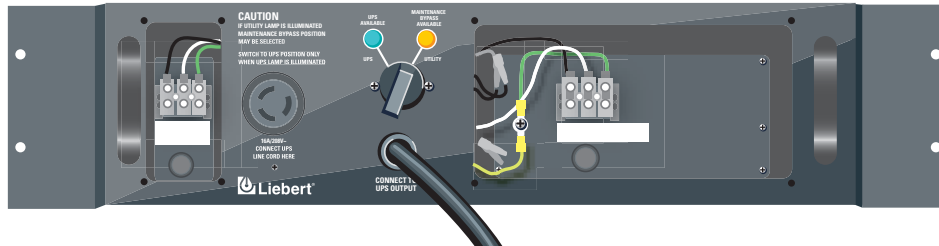
4.2 Electrical Connections

The cable sizes and distribution methods used during installation are subject to local and national electrical codes of practice and are therefore not listed in this manual. **Table 2** shows the standard current ratings.

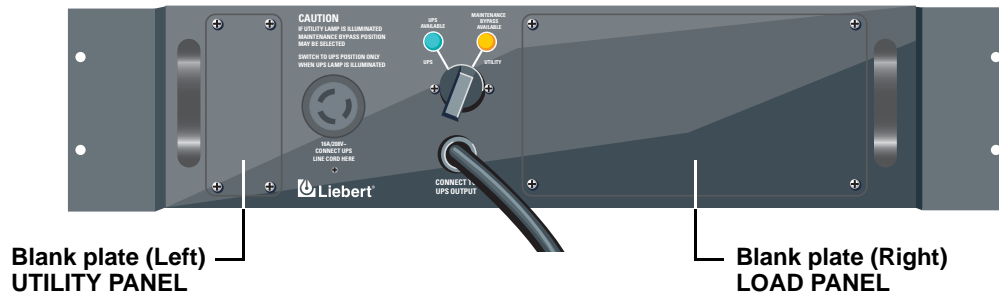
4.3 Conversion From Cord-Receptacle to Hardwire

Two wiring access panels on the front of the 3U POD allow access to the wiring compartments. Each access door is retained using four Phillips head screws.

1. Remove the eight Phillips head screws from the wiring access panels on the front of the unit. Save the screws.
2. Holding the panels aside, disconnect the three wires that connect each panel to the internal terminal block. Remove the panels. **DO NOT LOOSEN THE UPPER TERMINAL BLOCK SCREWS USED FOR INTERNAL WIRING.**



3. Install flexible conduit with wiring to the applicable conduit entry holes on the side or rear of the unit.
4. Terminate the wiring to the internal terminal blocks. The wiring compartments provide terminal blocks to connect Line, Neutral, and Ground for both the UTILITY input and the LOAD output.
5. When wiring is complete and secure, install the two blank hardwire access plates supplied with the unit, using the eight screws removed in **Step 1**.



6. The unit is now ready to use.

Properly grounded (earthed) equipment provides multiple benefits

High quality ground (earth) connections are required for the equipment ground conductors (protective earth) and grounding electrode conductor (power system earth connection) to reduce electrical noise and provide for safe operation of the UPS and connected loads. Conduit used alone without a grounding conductor wire is not an acceptable connection. Size ground (protective earth) conductors equal to circuit conductors.

For wiring information, refer to **Table 2**.

5.0 INDICATOR LAMPS

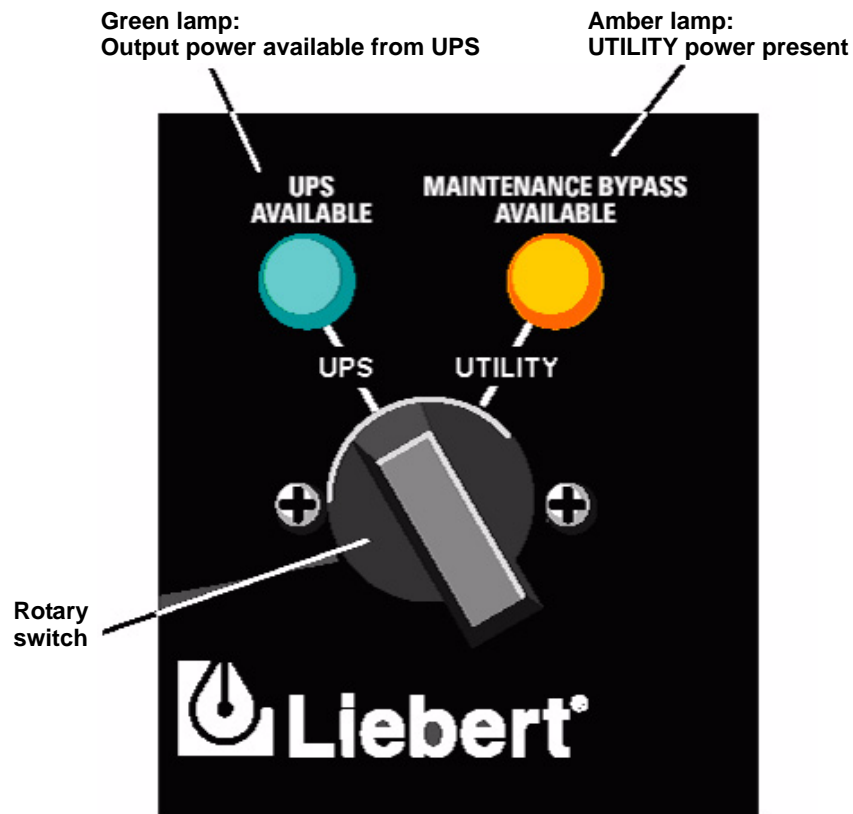
5.1 UTILITY Indicator Lamp

This amber lamp is illuminated when utility power is present (see **Figure 5**). It signals that you may transfer the loads to maintenance bypass (UTILITY mode) operation via the rotary switch. During a utility power outage, this lamp will be off and the UPS will supply battery back-up power to the connected loads.

5.2 UPS Indicator Lamp

This green lamp is illuminated when there is output power available from the UPS (see **Figure 5**). It signals that it is safe to transfer the connected loads from utility power back to UPS output power.

Figure 5 Indicator lamps on MP2-220N POD



6.0 OPERATION

6.1 Transfer to Maintenance Bypass

To transfer to maintenance bypass (utility) from UPS, use the following steps:

1. Ensure the UTILITY lamp (amber) is illuminated. If the lamp is not illuminated, refer to **7.0 - Troubleshooting**.
2. Transfer the rotary switch from UPS to UTILITY, provided the UTILITY lamp is illuminated on the 3U POD.
3. Turn the UPS off.
4. Disconnect the two cables connecting the UPS to the 3U POD.
5. You may now service the UPS.

6.2 Transfer to UPS

To transfer to UPS from maintenance bypass (utility), use the following steps:

1. Reconnect the UPS to the 3U POD. Start the UPS according to the instructions in the UPS user manual.
2. Verify that UPS lamp (green) on the 3U POD is illuminated. If so, transfer the rotary bypass switch from UTILITY to UPS. If the lamp does not illuminate, refer to **7.0 - Troubleshooting**.

7.0 TROUBLESHOOTING

Problem	Cause	Solution
UTILITY lamp (amber) not illuminated.	Utility not present.	Call qualified service personnel to restore power.
	Utility Branch Circuit Breaker may be open.	Verify that the branch circuit breaker is closed.
	3U POD input power not connected to UTILITY.	Refer to the 3U POD installation instructions in this manual: 2.0 - Rack Mount Installation 3.0 - Installation and Electrical Connections 4.0 - Alternate Hardwire Installation
UPS Available lamp (green) not illuminated.	UPS output power not present.	Turn on the UPS. Refer to the UPS user manual.
	UPS input and/or output cord not connected to 3U POD.	Refer to the 3U POD installation instructions in this manual: 2.0 - Rack Mount Installation 3.0 - Installation and Electrical Connections 4.0 - Alternate Hardwire Installation
3U POD will not start some / all connected loads.	Input power cannot support load.	Verify that utility and UPS are on, all circuit protectors are closed and the load is within the rating of the power source.
Utility or UPS circuit protectors trip after resetting.	Overcurrent on 3U POD connected load.	Recalculate load requirements.

8.0 SPECIFICATIONS

Transfer Time (to and from maintenance bypass)	< 6 milliseconds
Operating Ambient Temperature	32°F to 104°F (0°C to +40°C)
Storage Ambient Temperature	-4°F to 140°F (-20°C to +60°C)
Dimensions with brackets W x D x H: in. (mm)	19.0 x 5.24 x 5.24 (482.6 x 133 x 133)
Humidity	0 to 95% non-condensing
Agency/Standards	UL1778, c-UL, ISTA Procedure 1A
Electrical Rating	See Model Label on 3U POD

This 3U POD is intended for use with a UPS meeting all the following requirements:

- UPS input cord is compatible with the rating and type of receptacle on the 3U POD labeled “CONNECT UPS LINE CORD HERE.”
- UPS output receptacle is compatible with the 3U POD input power connector labeled “UPS.”
- Available utility is compatible with the 3U POD input connection and an appropriately sized branch circuit breaker has been provided.

Table 2 Breaker specifications

Model VA - Volt Rating	Input Current Rating at 208V	Recommended (Maximum) External Overcurrent Protection	Recommended Wire (including ground wire) (75°C copper wire)	Maximum Wire Accepted by Terminal Block	Terminal Tightening Torque
MP2-220N	16A	20A	12 AWG	10 AWG	20 in-lb

8.1 Product Warranty Registration

To register for warranty protection:

- Visit the **Quick Links** section of our Web site at:
<http://www.liebert.com>
- Click on **Product Warranty Registration** and fill in the form.

If you have any questions, please contact us at:

US: 800-222-5877
 Outside the US: 614-841-6755
upstech@liebert.com

3U MP2-220N POD™

USER MANUAL

The Company Behind the Products

With over a million installations around the globe, Liebert is the world leader in computer protection systems. Since its founding in 1965, Liebert has developed a complete range of support and protection systems for sensitive electronics:

- Environmental systems—close-control air conditioning from 1 to 60 tons
- Power conditioning and UPS with power ranges from 300 VA to more than 1000 kVA
- Integrated systems that provide both environmental and power protection in a single, flexible package
- Monitoring and control—from systems of any size or location, on-site or remote
- Service and support through more than 100 service centers around the world and a 24/7 Customer Response Center

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