

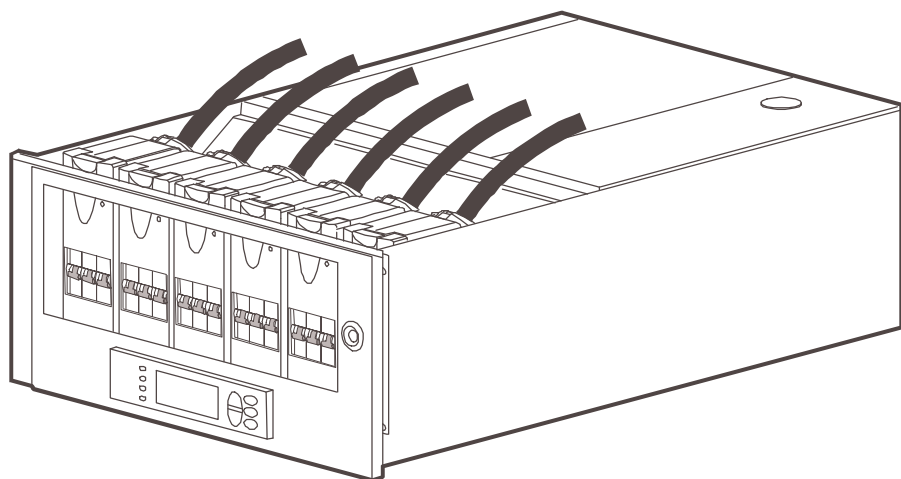
Modular Rack-Mount Power Distribution Unit (PDU)

Installation

PDPM138H-5U, PDPM72F-5U

Latest updates are available on the Schneider Electric website

03/2024



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Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in death or serious injury.**

Failure to follow these instructions will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in death or serious injury.**

Failure to follow these instructions can result in death, serious injury, or equipment damage.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury.**

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

Failure to follow these instructions can result in equipment damage.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety Precautions

This manual contains important instructions that must be followed during installation, operation, and maintenance of the power distribution unit (PDU). For safety reasons, only trained users are allowed to operate the display interface and replace the power distribution modules (PDMs).

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.
- The PDU must be installed in accordance with the National Electrical Code or the Canadian Electrical Code and all applicable local codes.
- Service access areas are locked with a Red Key. The Red Keys must remain under the control of qualified service personnel.
- Wear appropriate personal protection equipment (PPE) when performing maintenance on this PDU.

Failure to follow these instructions will result in death or serious injury.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying the equipment and perform appropriate lockout/tagout procedures before installing or removing the PDM.

Failure to follow these instructions will result in death or serious injury.

WARNING

UNEXPECTED BEHAVIOR OF APPLICATION

Only trained users should operate the display or replace the PDMs.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

CAUTION

HAZARD OF EQUIPMENT DAMAGE

- For PDMs with RCDs (residual current devices) installed, the occurrence of a ground fault will automatically open the adjacent circuit-breaker.
- PDMs with RCDs are equipped with a test button. Periodic testing of the RCD may be required. Check local codes for your region.

Failure to follow these instructions can result in injury or equipment damage.

Regulatory Agency Approval

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 installation guide, 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.

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This is a class A product. In a domestic environment this product may cause interference in which case the user may be required to take adequate measures.

Additional Safety Information

Before You Begin

Verify that the system is free from all short circuits and grounds, except those grounds installed according to local regulations (according to the National Electrical Code in the U.S.A., for instance). If high-potential voltage testing is necessary, follow recommendations in equipment documentation to prevent accidental equipment damage.

Before energizing equipment:

- Remove tools, meters, and debris from equipment.
- Close the equipment cabinet door.
- Perform all start-up tests recommended by the manufacturer.

Operation and Adjustments

The following precautions are from the NEMA Standards Publication ICS 7.1-195 (English version prevails):

- Regardless of the care exercised in the design and manufacture of equipment or in the selection and ratings of components, there are hazards that can be encountered if such equipment is improperly operated.
- It is possible to misadjust the equipment and thus produce unsatisfactory or unsafe operation. Always use the manufacturer instructions as a guide for functional adjustments. Personnel who have access to these adjustments should be familiar with the equipment manufacturer's instructions and other equipment used with this product.
- Only those operational adjustments actually required by the operator should be accessible to the operator. Access to other controls should be restricted to prevent unauthorized changes in operating characteristics.

⚠ WARNING

UNGUARDED MACHINERY HAZARD

- Do not use this product with equipment which does not have point-of-operation protection.
- Do not reach into equipment during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Specifications

Input Conductors

This product is rated 200 A. It should be supplied with a circuit breaker with a maximum rating of 200 A.

NOTE: Input conductors are to be torqued to 31.1 Nm (275 lb-in) using an 8 mm (5/16 in) Allen (hexagonal) wrench.

AC Input Specifications

Nominal voltage (V)	400 V 3PH 208 V 3PH
Frequency (Hz)	47-63
Connections	3PH + N + PE
Maximum upstream circuit breaker (A)	200
Maximum continuous current (A)	160
Maximum continuous current with 100% rated circuit breaker (A)	200
Maximum main input conductor size (kcmil)	250

AC Output Specifications

Nominal voltage (V)	230 V/400 V 3PH 120 V/208 V 3PH
Maximum continuous current (A)	200
Connections	3PH + N + PE or 3 x (1PH + N + PE), based on attached PDMs
Full load rating	138 kW at 400 V 3PH 72 kW at 208 V 3PH
Output power cable connections	Various, based on attached PDMs
Output power cable lengths	Various, based on attached PDMs
Maximum PDMs	6
Maximum power distribution poles	18

Maximum Input Conductor Size

For North America, if supplied by a 200 A circuit breaker, it is recommended that conductors are sized in accordance with the following table.

Maximum Input Conductor (200 A, 75 °C/167 °F Conductors) Size for North America

Wiring system	Copper	Aluminum
3 CCC ¹ , 30 °C ambient	PH ² and N ³ = 3/0 AWG G ⁴ = 6 AWG ⁵	PH and N = 4/0 AWG G = 4 AWG
4 CCC, 30 °C ambient	PH and N = 4/0 AWG G = 6 AWG	PH and N = (2) ⁶ 1/0 AWG G = (2) 4 AWG

For countries outside of North America, if supplied by a 200 A circuit breaker, it is recommended that conductors are sized in accordance with the following table.

Maximum Input Conductor (200 A Conductors) Size for Countries outside North America

Installation method	Copper, PVC ⁷ insulation, 30 °C ambient (mm ²)	Copper, XLPE ⁸ or EPR ⁹ insulation, 30 °C ambient (mm ²)	Aluminum, PVC insulation, 30 °C ambient (mm ²)	Aluminum, XLPE or ERP insulation, 30 °C ambient (mm ²)
B1	PH and N = 95 PE ¹⁰ = 50	PH and N = 70 PE = 35	PH and N = 150 PE = 95	PH and N = 95 PE = 50
B2	PH and N = 120 PE = 70	PH and N = 95 PE = 50	PH and N = 240 PE = 120	PH and N = 120 PE = 70
C	PH and N = 95 PE = 50	PH and N = 70 PE = 35	PH and N = 150 PE = 95	PH and N = 95 PE = 50
E	PH and N = 95 PE = 50	PH and N = 70 PE = 35	PH and N = 120 PE = 70	PH and N = 95 PE = 50
F	PH and N = 70 PE = 35	PH and N = 50 PE = 25	PH and N = 95 PE = 50	PH and N = 70 PE = 35

PDU Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
PDPM138H-5U PDPM72F-5U	23.5 (52)	229 (9)	457 (18)	737 (29)

PDU Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
PDPM138H-5U PDPM72F-5U	34 (75)	406 (16.5)	610 (24)	889 (36)

1. CCC = Current-Carrying Conductors
2. PH = Phase conductor
3. N = Neutral conductor
4. G = Ground conductor
5. AWG = American Wire Gauge
6. (2) = Two conductors per terminal
7. PVC = Polyvinyl3-chloride
8. XLPE = Cross-linked polyethylene
9. EPR = Ethylene propylene rubber
10. PE = Protective Earth conductor

Environment

	Operating	Storage
Temperature	0 °C to 30 °C (32 °F to 86 °F) without load derating. 0 °C to 40 °C (32 °F to 104 °F) with power derated.	0 °C to 45 °C (32 °F to 113 °F)
Relative humidity	0-95% non-condensing	0-95% non-condensing
Elevation	Designed for operation in 0-1000 m (0-3300 feet) elevation.	
Operation environment	Protected from water and conductive contaminants	

NOTE: If this product is installed in an environment with greater than 30 °C (86 °F) ambient temperature, either derate the product’s current rating, or increase the size of the conductors supplying, in accordance with the derating factors of NFPA 70 and IEC 60364-5-53.

Compliance

Safety	IEC 61439-1: 2020-05 IEC 61439-2: 2020-07 DIN EN IEC 61439-1 (VDE 0660-600-1): 2021-10 DIN EN IEC 61439-2 (VDE 0660-600-2): 2021-10 EN IEC 61439-1: 2021 EN IEC 61439-2: 2021 DIN EN IEC 62040-1 (VDE 0558-510): 2020 EN IEC 62040-1: 2019 DIN EN IEC 62040-1/A11 (VDE 0558-510/A11): 2021 EN IEC 62040-1:2019/A11: 2021
Conditional short-circuit current rating (ICC)	10 kA
Rated impulse withstand voltage (UCC)	4 kV
Rated diversity factor	0.7
Overvoltage category	OVCIII
Protective class	1
Pollution degree	2

NOTE: If this product is installed in an environment with greater than 30 °C (86 °F) ambient temperature, either derate the this product’s current rating, or increase the size of the conductors supplying, in accordance with the derating factors of NFPA 70 and IEC 60364-5-53.

Receiving

External Inspection

When the shipment arrives, inspect the shipping materials for any signs of damage or mishandling. Check tilt and impact indicators. Do not attempt to install the system if any damage is apparent. If any damage is noted, contact Schneider Electric customer support and file a damage claim with the shipping agency within 24 hours of receipt.

Compare the components of the shipment with the bill of lading. Report any missing items to the carrier and to Schneider Electric customer support immediately.

Verify that labelled units match the order confirmation.

Bill of Lading

Item	Quantity
Literature kit for rack-mount PDU	1
Label kit for rack-mount PDU	1
Stationary rail, black	2
Adjustable rail, black	2
Tray support chassis for rack-mount PDU	1
Flat-head Phillips screw M6x12	6
Flanged hex nut M6	6
Plastic cup washer M6, black	14
Phillips/slot screw M6x16	14
Nut cage M6 14/16 swg	6
Rear bracket tie-down for rack-mount PDU	2
Blank cover brain PCB plate	1
Rack-mount PDU	1

Installation Procedure

1. Turn off the Power, page 14.
2. Install the PDU, page 15.
3. **Option:** Prepare the PDU for Input Cables that are Larger than for the Standard Hole, page 16.
4. Connect the Input Cables, page 18.
5. Install PDMs. Follow the installation manual provided with the PDMs.
6. Connect the Communication Cables, page 19.

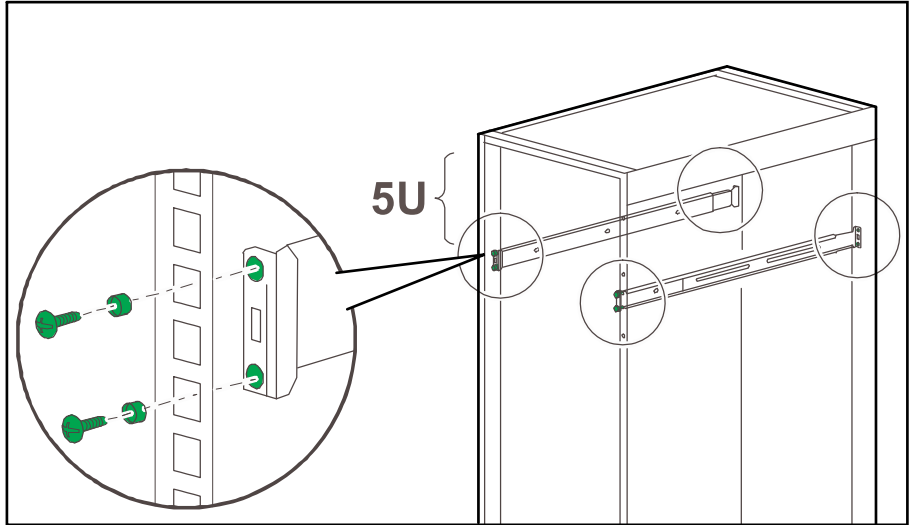
For moving or decommissioning the PDU after installation has been completed, see [Decommission or Move the PDU to a New Location](#), page 20.

Turn off the Power

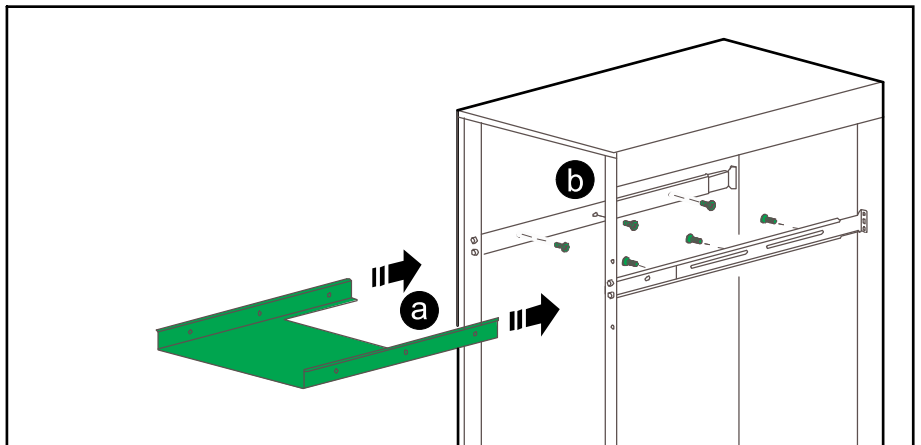
1. Set the PDMs to the OFF position.
2. Set the utility/mains circuit breaker to the OFF position.
3. If the mains supply is a UPS, set the UPS and its circuit breaker supplying this product to the OFF position.
4. Disconnect the input conductors from the mains supply or the UPS.

Install the PDU

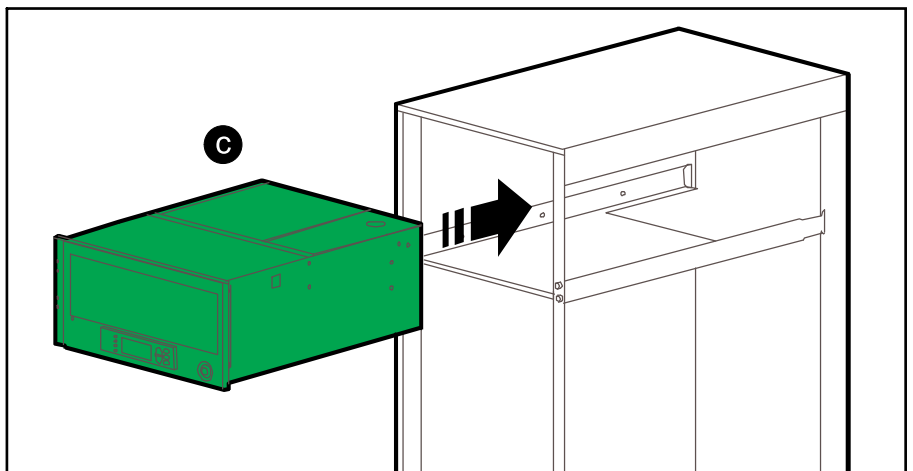
1. Install the mounting rails in the cabinet by using the provided screws. The PDU requires a 5U space from the top of the cabinet.



2. Slide the support tray (a) into the mounting rails (b) and secure it with the provided screws.



3. Slide the bracket tie-downs onto the guide pins on the side of the PDU (c) and secure the tie-downs to the back posts of the cabinet with the provided screws.

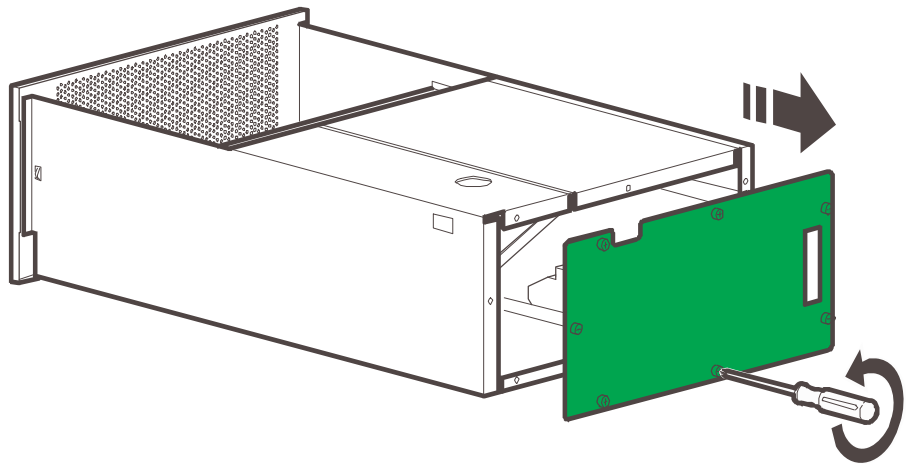


Prepare the PDU for Input Cables that are Larger than for the Standard Hole

NOTE: If the conduit size for your installation is too large for the conduit access knock-out, the hole must be enlarged. The cutout on the top (or bottom) cover plate may need to be enlarged depending on the installation requirements.

1. Loosen the seven screws and remove the back panel.

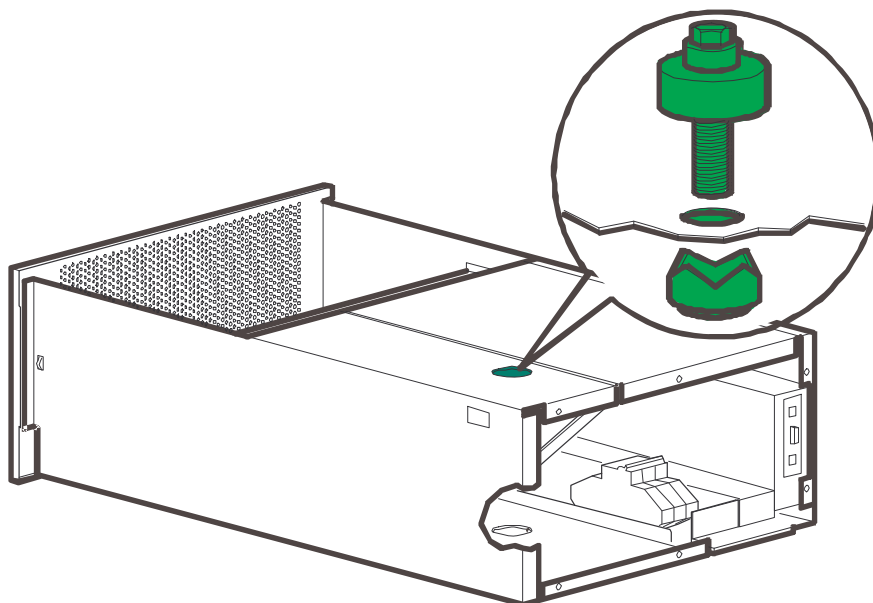
Rear View



2. Perform one of the following:

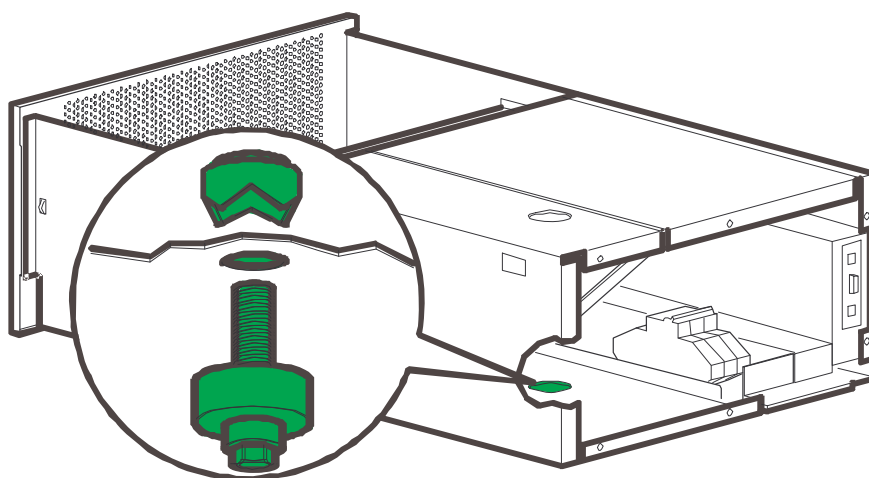
- **Top cable entry:** Enlarge the knock-out hole in the top of the PDU for larger conduit. OR

Rear View



- **Bottom cable entry:** Enlarge the knock-out hole in the bottom of the PDU for larger conduit.

Rear View



⚠ WARNING

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

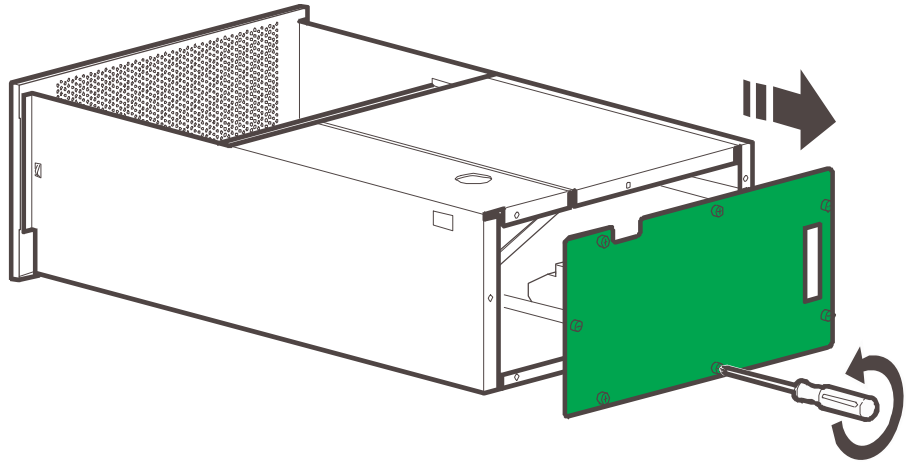
Be sure to remove the debris inside the PDU after the knock-out hole is enlarged.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

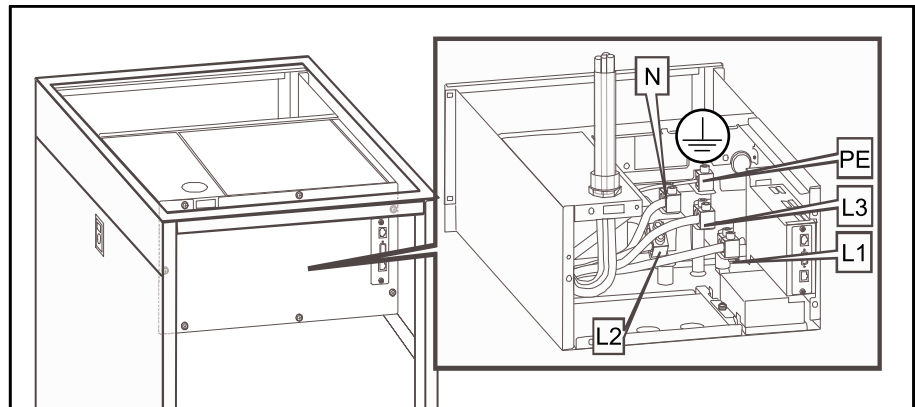
Connect the Input Cables

1. Loosen the seven screws and remove the back panel to gain access to the compression terminals (the top and bottom cover plates can be removed if necessary for easier access).

Rear View



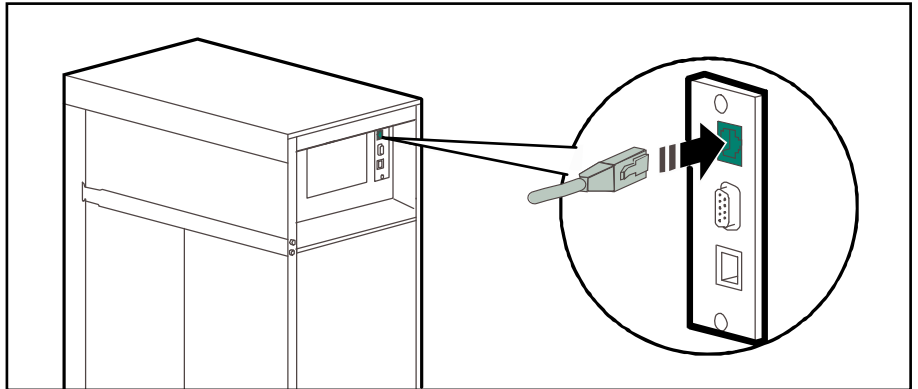
2. Connect the Protective Earth/Ground (PE/G), neutral (N), and phase (L1, L2, and L3) conductors to the appropriate compression terminals and conduits.



3. Reinstall any panels that were removed.

Connect the Communication Cables

1. Connect one end of the communication cable to the port on the back of the PDU and the other to the local area network.



Decommission or Move the PDU to a New Location

⚡⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.

Failure to follow these instructions will result in death or serious injury.

1. Shut down the PDU completely – follow the instructions in the PDU operation manual.
2. Remove all PDMs – follow the installation manual provided with the PDM.

⚡⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Turn off all power supplying the equipment and perform appropriate lockout/tagout procedures before installing or removing the PDM.

Failure to follow these instructions will result in death or serious injury.

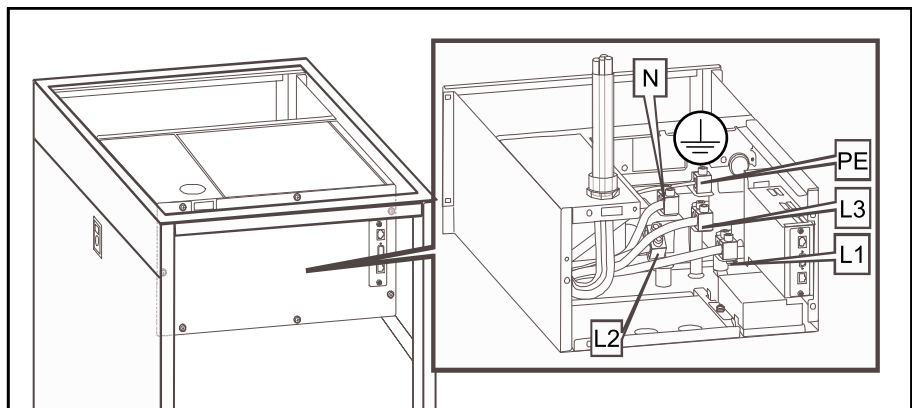
3. Measure for and verify ABSENCE of voltage on each input terminal before continuing.

⚡⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Measure for and verify ABSENCE of voltage on each input terminal before continuing.

Failure to follow these instructions will result in death or serious injury.



4. Remove the back panel. Disconnect and remove all power cables from the PDU. See [Connect the Input Cables](#), page 18 for details.
5. Disconnect and remove all communication cables from the PDU. See [Connect the Communication Cables](#), page 19 for details.
6. Slide and pull out the rack-mount PDU from the support tray.
7. Perform one of the following:
 - Decommission the rack-mount PDU, OR
 - Move the rack-mount PDU to a new location to install it.

- 8. Only for installing the PDU in a new location:** Follow the installation manual to install the PDU in the new location. See Installation Procedure, page 13 for installation overview.

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please ask for confirmation of the information given in this publication.

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