

Instructions for Electricians

Power Distribution Unit 40kW 208/480/600V

PD40F6FK1-M
PD40G6FK1-M
PD40L6FK1-M



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General Information

Overview

Note the definitions for the icons here and be observant for them throughout this manual. They are intended to call attention to potential hazards and important information.

Check for updates to this instruction manual by going to the APC Web site (www.apc.com). Look for the latest letter revision (A, B, etc.) of the part number on the back of this manual.

Symbols used in this manual



Electrical Hazard: Indicates an electrical hazard which, if not avoided, could result in injury or death.



Danger: Indicates a hazard which, if not avoided, could result in severe personal injury or death.



Warning: Indicates a hazard which, if not avoided, could result in personal injury or damage to product or other property.



Heavy: Indicates a heavy load that should not be lifted without assistance.



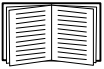
Caution: Indicates a potential hazard which, if not avoided, could result in damage to the equipment or other property.



Tip Hazard: This equipment is easily tipped. Use extreme caution when unpacking or moving.



Note: Indicates important information.



Indicates that more information is available on the same subject.

Explanation of procedures

The procedures in this manual provide instruction for electricians on how to connect utility conductors to the PDU Main Input switch and an Emergency Power Off (EPO) switch to the user connection plate. Review the information provided in the InfraStruXure Configure-To-Order (CTO) report and accompanying documentation for instructions specific to your installation, and always follow the NEC and local codes. Before an electrician begins connecting the system, an APC Field Service Engineer must:

- Position and level the Symmetra PX UPS, InfraStruXure PDU, and, if applicable, the XR Battery Enclosure.
- Exchange side panels and attach the Symmetra PX UPS, InfraStruXure PDU, and XR Battery Enclosure.

Connection Instructions

Safety

Connections are to be performed by a licensed electrician only!



Electrical Hazard!

The following procedures require a licensed electrician:

- Connection of utility conductors
- Installation of an upstream circuit breaker
- Connection to the Main Input switch
- Wiring under the floor
- Connection of an EPO switch

Connect Utility Conductors and EPO Switch

Electrical requirements

	208 V Input	480 V Input	600 V Input
Service distribution breaker †‡	175 A	80 A	60 A
Conductors to Main Input switch and system grounding bus†	Transformer: 3W + G + GEC No Transformer: 4W + G	3W + G + GEC	3W + G + GEC
Maximum input conductor wire size (for S3–S4 frame)	250 kcmil	250 kcmil	250 kcmil
Type of lugs for input conductors	Saddle lugs	Saddle lugs	Saddle lugs
Recommended wire sizing‡			
L1, L2, L3, N	3/0 AWG	4 AWG	4 AWG
G	6 AWG	8 AWG	8 AWG
GEC	4 AWG	4 AWG	4 AWG

† Provided by customer.

‡ The specifications are recommendations. Consult the NEC and local codes for requirements specific to your installation.

Torque specs and tools required

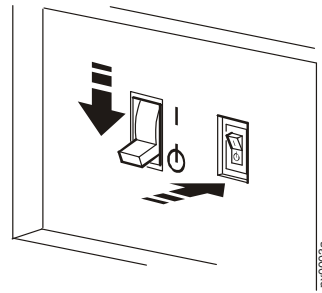
Before connecting to the terminals, verify the torque specs below by checking the specifications on the Main Input switch.

Terminal	Torque	Tools
L1, L2, L3	150 in-lb	6-mm Allen wrench
N [†]	125 in-lb	13-mm socket wrench
G, GEC	4–6 AWG: 45 in-lb 8 AWG: 40 in-lb	Slotted screwdriver

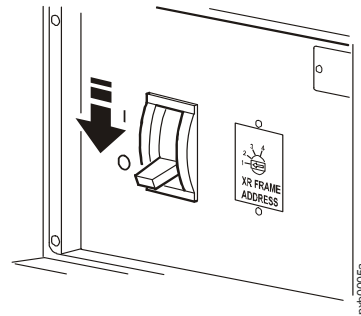
[†] Only on PDUs without a transformer.

Ensure Total Power Off

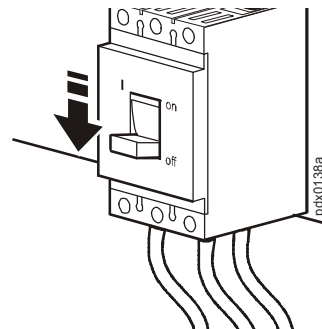
1. Set the UPS **DC Disconnect** breaker and **System Enable** switch to OFF.



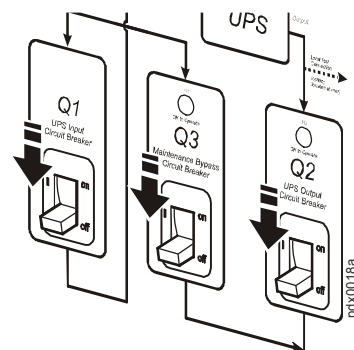
2. If applicable, set the XR Battery Enclosure **DC Disconnect** breaker to OFF.



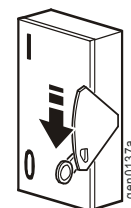
3. Set the PDU **Main Input** switch to OFF.



4. Open (turn OFF) the **Q1**, **Q2**, and **Q3** breakers on the PDU.

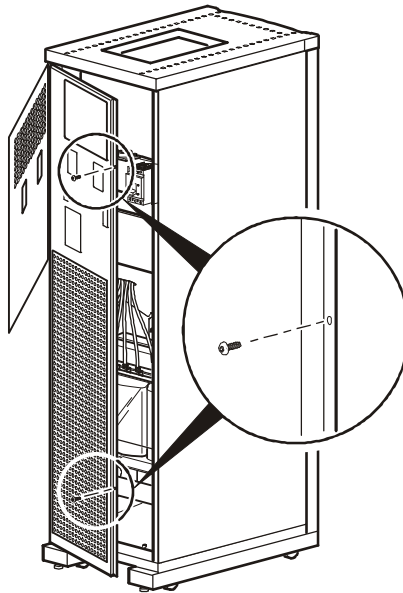


5. Set the upstream input utility circuit breaker to the OFF or Locked Out position.



Access the PDU Main Input switch

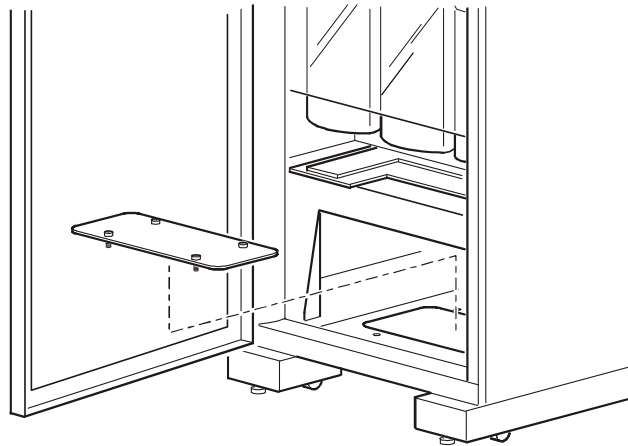
1. Open the back doors of the PDU, unlock the top, smaller door, using the provided red key.
2. Loosen the two screws holding the larger, hinged door in place.



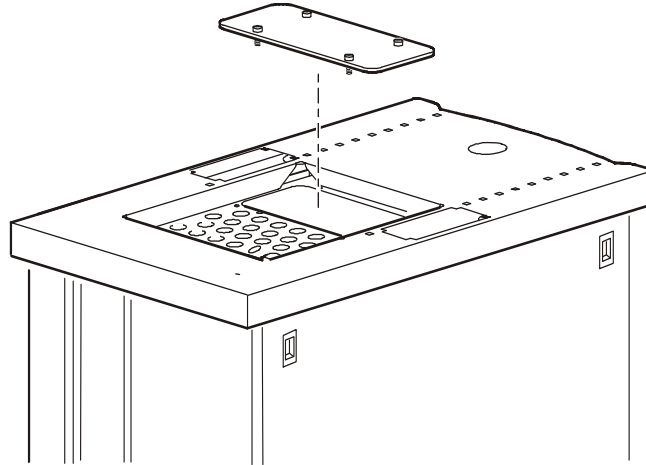
Attach conduit to the PDU for the input conductors

1. Remove the rectangular gland plate by loosening the captive screws, using a Phillips or standard screwdriver:

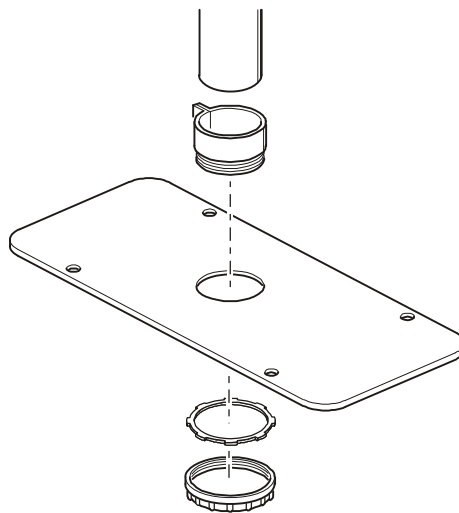
For wiring under a raised floor: Remove the plate in the floor of the PDU.



For overhead wiring: Remove the user connection plate from the top of the PDU.



2. Cut an appropriately-sized hole in the gland plate for the conduit.
3. Re-attach the gland plate.
4. Install a lock-nut and bushing to the conduit.
5. Thread the conduit through the hole.



Install a circuit breaker



Warning: When you connect the InfraStruXure PDU to utility power, you must install a circuit breaker to protect the PDU against over-current.

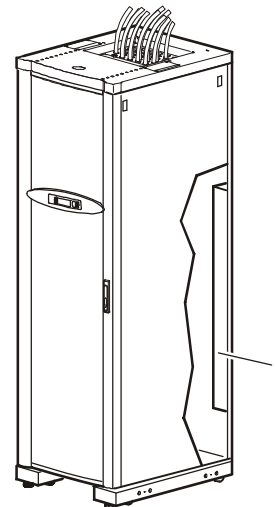
Determine the amperage of the circuit breaker that you need to install:

Input Voltage	Circuit Breaker Amperage
208V	175 A
480V	80 A
600V	60 A

Route the input conductors to the Main Input switch

For overhead wiring, run the input conductors directly to the Main Input switch.

For wiring under a raised floor, run the input conductors through the wireway (A) within the PDU to the Main Input switch.



Connect input conductors



Electrical Hazard: A licensed electrician must connect input conductors to the PDU!

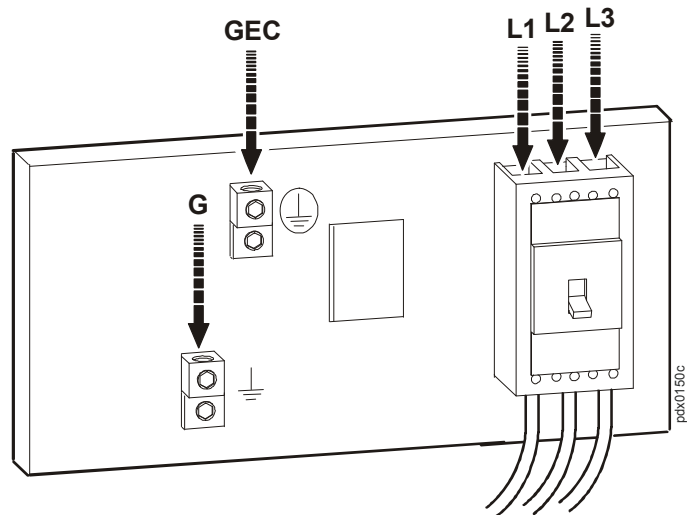
At the Main Input switch, connect the input wiring according to the labels on the switch and the illustrations below. See the table “Torque specs and tools required” on page 3 for specific information about connecting to each terminal.



Warning: Connect the conductors to the terminals according to the labels on the terminals. Use copper conductors only.

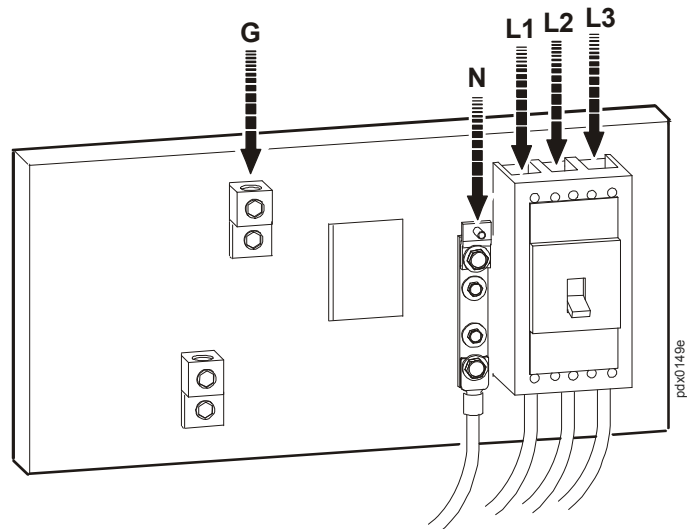
208/480/600 V input with a transformer:

3-phase, 3-wire + ground + GEC to a suitable grounding electrode



208 V input without a transformer:

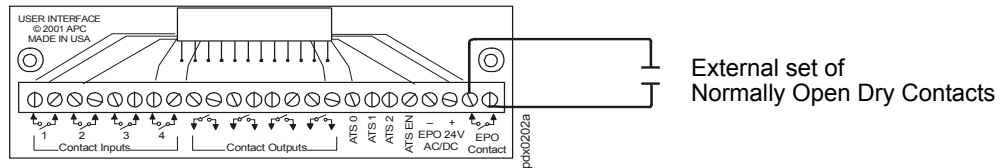
208 V, 3-phase, 4-wire + ground



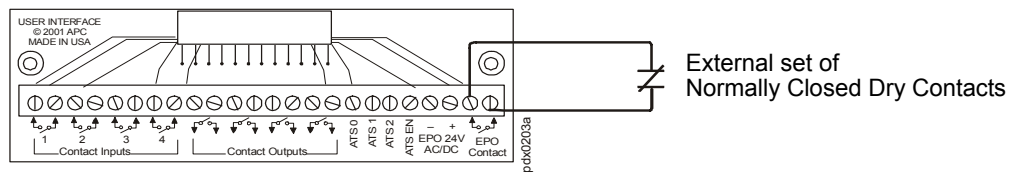
Connect an Emergency Power Off (EPO) switch

1. Connect the switch to the EPO connection point terminals located on the bottom side of the PDU user connection plate. Read the label next to the terminal block to determine which terminals to connect to for the signal type you are using:

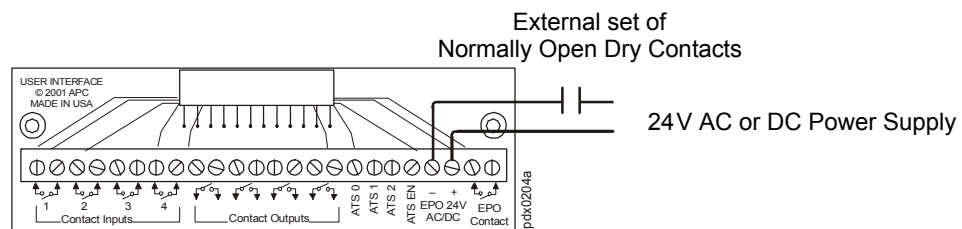
– Contact Closure—Normally Open



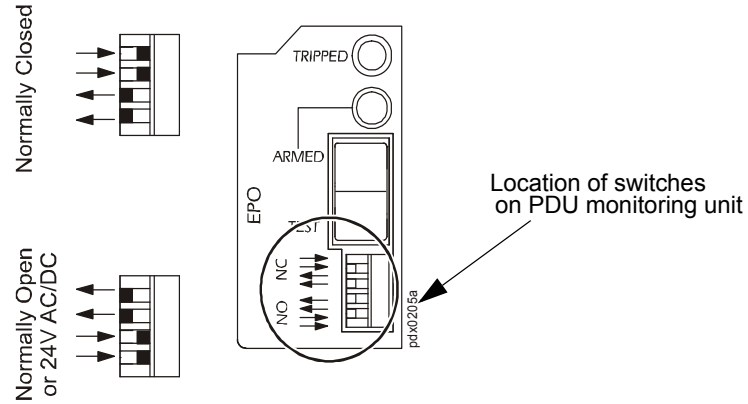
– Contact Closure—Normally Closed



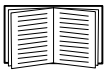
– 24 Vac/Vdc—Normally Open



2. Verify that the EPO DIP switches on the PDU monitoring unit are configured properly for the signal type you are using. The labels above the switches and the figure below show the correct settings for both the Normally Open (NO) and Normally Closed (NC) position.



Note: The default setting on the EPO interface on the PDU monitoring unit is for a **Normally Open (NO)** switch.



For information on testing the EPO switch, see the *40kW InfraStruXure PDU Operation and Configuration* manual.

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990-1177C

12/2009