

# How to Connect Utility Conductors to the PDU with System Bypass

Connection to be performed by a licensed electrician only!



The following procedures require a licensed electrician:

- Connection of utility conductors
- Installation of an upstream circuit breaker
- Connection to the main input switch, bypass input switch, and cross tie output breaker
- Connection to a branch circuit

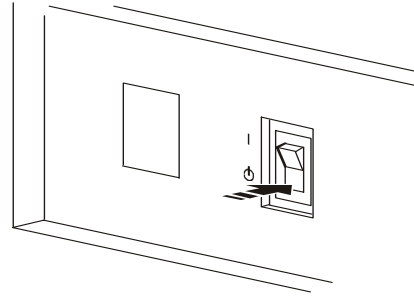
## Procedures in this instruction sheet

The procedures in this instruction sheet provide instruction for electricians on how to connect to the main input switch, bypass input switch, and cross tie output breaker. Review the information provided in the CTO report and accompanying documentation for instructions specific to your installation, and always follow the NEC and local codes. Before an electrician begins connecting your system, an APC Field Service Engineer must:

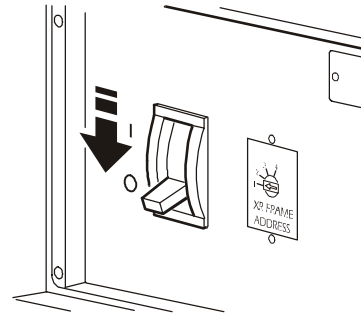
- Position and level the Symmetra PX UPS, PDU with System Bypass, and Battery Enclosure.
- Exchange side panels and attach the Symmetra PX UPS, PDU with System Bypass, and Battery Enclosure.

## Ensure Total Power Off

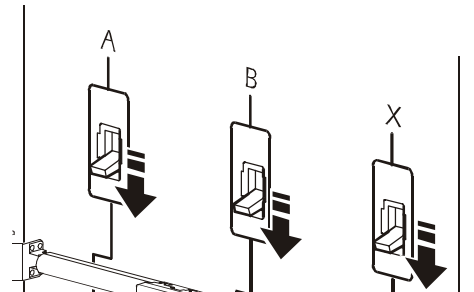
1. Set the UPS **System Enable** switch to the OFF position.



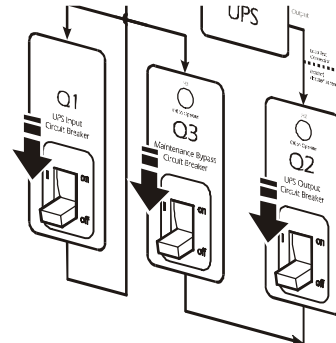
2. Set the Battery Enclosure and any XR Battery Enclosure **DC Disconnect** breaker to the OFF position.



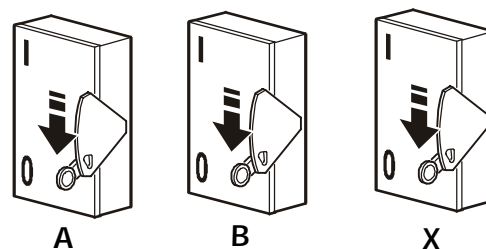
3. Set the **Main Input** switch (A), and, if applicable, the Q10 **Bypass Input** switch (B), and **Cross Tie Output** breaker (X) on the PDU to the OFF position.



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



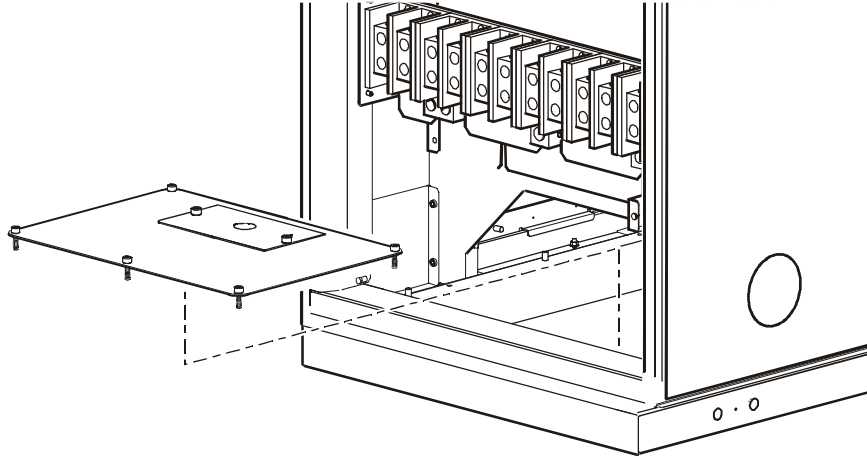
5. Set the upstream main input, and, if applicable, the bypass input and cross tie utility breaker to the OFF or Locked Out position.



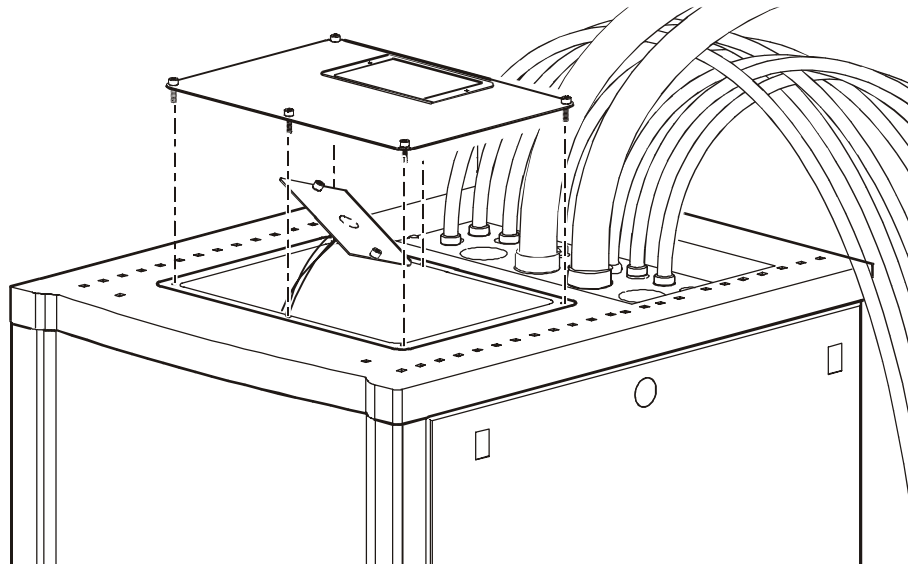
## Attach conduit to the PDU for the conductors

1. Remove one of the rectangular gland plates by loosening the captive screws, using a Phillips or standard screwdriver.

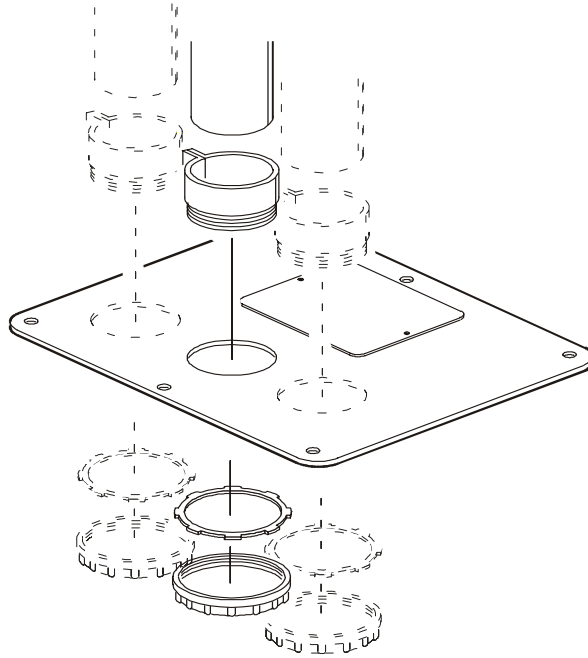
*For wiring under a raised floor:* remove the plate in the floor of the PDU.



*For overhead wiring:* detach the user connection plate, route it through the opening in the gland plate, carefully set it aside (do not disturb the connected wires), and remove the gland plate in the roof of the PDU.



2. Cut an appropriately sized hole in the gland plate for each switch (or breaker) that you are connecting to.
3. Re-attach the gland plate.
4. Install a lock-nut and bushing to the conduit.
5. Thread the conduit through the hole in the gland plate.



## Install a utility/branch circuit breaker



**When you connect the PDU with System Bypass to utility power, you must install a circuit breaker to protect the PDU from over-current.**

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

Input Voltage	Circuit Breaker Amperage
208 V	350 A
480 V	150 A
600 V	125 A

## Run input conductors

For overhead wiring, route the conductors directly to the terminals on the main input switch, and if applicable, the bypass input switch and cross tie output breaker. For wiring under the floor, route the conductors to the terminals in the bottom of the PDU that correspond to the main input switch, and if applicable, the bypass input switch and cross tie output breaker.

**Overhead wiring.** See the illustrations below for the input conductors that you need to run for your PDU. The illustrations show PDUs with a main input, bypass input, and cross tie output breaker. If your PDU does not have all three breakers, make the connections shown for the breakers that are on your PDU. For over-head wiring, lugs are provided with the PDU for the neutral and ground connections that you need to make. Crimp the provided lugs onto each ground and neutral wire.

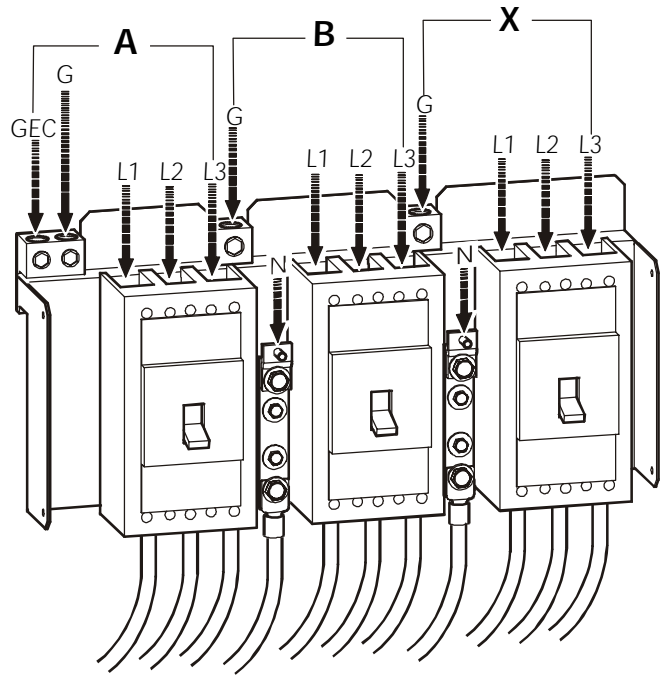


Warning

**Connect the input conductors to the terminals according to the labels on the terminals. Use copper conductors only. Tighten the L1, L2, and L3 terminal lugs to 250 in/lb; tighten the neutral lugs to 230 in/lb; tighten the single ground lugs to 500in/lb; and tighten the dual ground lug to 275 in/lb.**

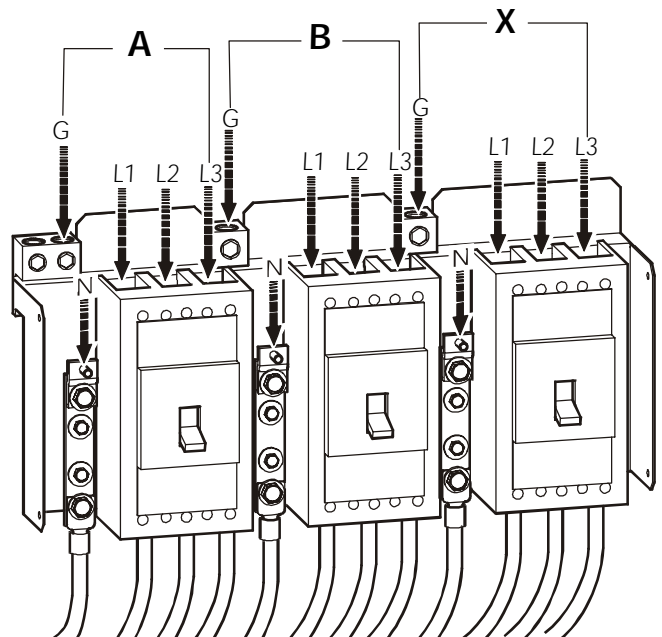
#### 208/480/600 V input with a transformer

- A: 3-phase, 3-wire + ground + GEC to building steel
- B: 208 V, 3-phase, 4-wire + ground
- X: 208 V, 3-phase, 4-wire + ground



#### 208V input without a transformer

- A: 208 V, 3-phase, 4-wire + ground
- B: 208 V, 3-phase, 4-wire + ground
- X: 208 V, 3-phase, 4-wire + ground



## Under-floor wiring

See the illustrations below for the input conductors that you need to run for your PDU. The illustrations show PDUs with a main input, bypass input, and cross tie output breaker. If your PDU does not have all three breakers, make the connections shown for the breakers that your PDU has.

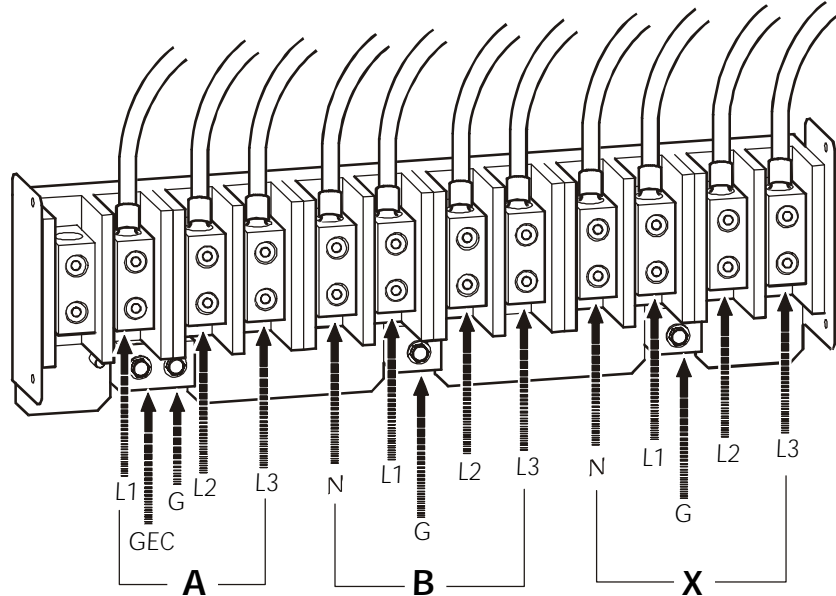


Warning

Use a 1/2-inch Allen wrench to make the connections. Tighten the screws on the terminal block 500 in/lb. Use copper conductors only.

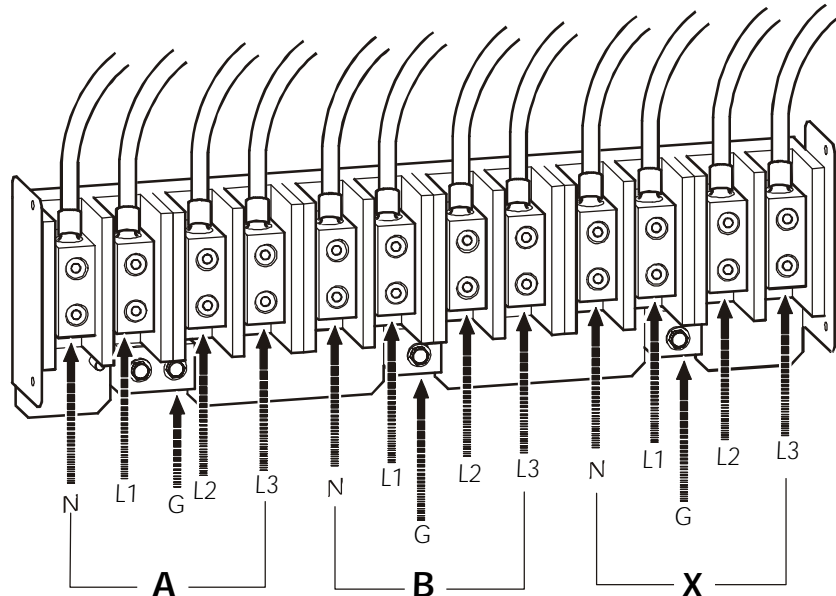
### 208/480/600 V input with a transformer

- A: 3-phase, 3-wire + ground + GEC to building steel
- B: 208 V, 3-phase, 4-wire + ground
- X: 208 V, 3-phase, 4-wire + ground



### 208 V input without a transformer

- A: 208 V, 3-phase, 4-wire + ground
- B: 208 V, 3-phase, 4-wire + ground
- X: 208 V, 3-phase, 4-wire + ground





# APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to find answers to frequently asked questions (FAQs), to access documents in the APC Knowledge Base, and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)  
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**  
Global support with FAQs, knowledge base, and e-support.
- Contact an APC Customer Support center by telephone or e-mail.
  - Regional centers:

Direct InfraStruXure Customer Support Line	(1)(877)537-0607 (toll free)
APC headquarters U.S., Canada	(1)(800)800-4272 (toll free)
Latin America	(1)(401)789-5735 (USA)
Europe, Middle East, Africa	(353)(91)702020 (Ireland)
Japan	(0) 35434-2021

- Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

Entire contents copyright © 2003 American Power Conversion. All rights reserved.  
Reproduction in whole or in part without permission is prohibited. APC, the APC logo, and InfraStruXure are trademarks of American Power Conversion Corporation and may be registered in some jurisdictions. All other trademarks, product names, and corporate names are the property of their respective owners and are used for informational purposes only.

