

ASCO[®] Series 300

400-800 Amp

Quick Connect Input and Output Power Panels

DANGER

DANGER is used in this manual to warn of a hazard situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING is used in this manual to warn of a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION is used in this manual to warn of a hazardous situation which, if not avoided, could result in minor or moderate injury.

Important:

This manual contains information critical to the proper installation and operation of the ASCO Series 300 Quick Connect Input and Output Power Panels. Be certain to read and understand all instructions prior to installation and operation.

NOTICE

ASCO Series 300 Quick Connect Power Panels must be installed in conjunction with a transfer switch.

ASCO Series 300 Quick Connect Input Power Panels are listed to UL1008. ASCO Series 300 Quick Connect Output Panels are listed to UL 891 for Switchboards.

Limited Warranty

When this ASCO Series 300 Quick Connect Power Panel is installed and operated according to the manual's instructions ASCO Power Technologies will repair or replace any of its mechanical or electrical parts if they are found to be defective in material or workmanship within two year of the purchase date.

Maintenance

The ASCO Series 300 Quick Connect Power Panels will require periodic maintenance. ASCO Power Technologies recommends annual inspections to keep the panel in safe operating condition. ASCO Power Technologies recommends that the Pre-Operation and Maintenance Checklist under Appendix A serve as a basis for annual inspection.

Technical Support

ASCO Power Services are available to assist in resolving issues by calling 1-800-800 2726 (ASCO) or emailing powerwarranty@ascopower.com. For any other information, please refer to ascopower.com



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Prior to Installation: Site Preparation

Prepare installation site according to local codes.

The ASCO Series 300 Quick Connect Power Panel is to be secured to a building using appropriate 3/8" fasteners (See Figure 1).

The surface where the ASCO Series 300 Quick Connect Power Panel is to be secured must be capable of supporting the weight of the cabinet as well as the cable attached to it.

The following should be taken into consideration when locating the ASCO Series 300 Quick Connect Power Panel:

- The ASCO Series 300 Quick Connect Power Panel is designed for exterior operation ONLY
- Identify and meet local codes and local Authority Having Jurisdiction (AHJ)
- To prevent carbon monoxide poisoning from improperly ventilated generator emissions, the Power Panel must be mounted outdoors only. The mounting location is to be carefully selected to allow convenient connection to a generator, and located a suitable distance away from any building openings or HVAC inlets.
- Proper clearance must be allowed in front of the ASCO Series 300 Quick Connect Power Panel to allow for opening of access doors and attachment of externally connected cables. This distance should be no less than six (6) feet from the face of the panel.
- Access by unauthorized personnel and vandals should be taken into consideration when locating this device.

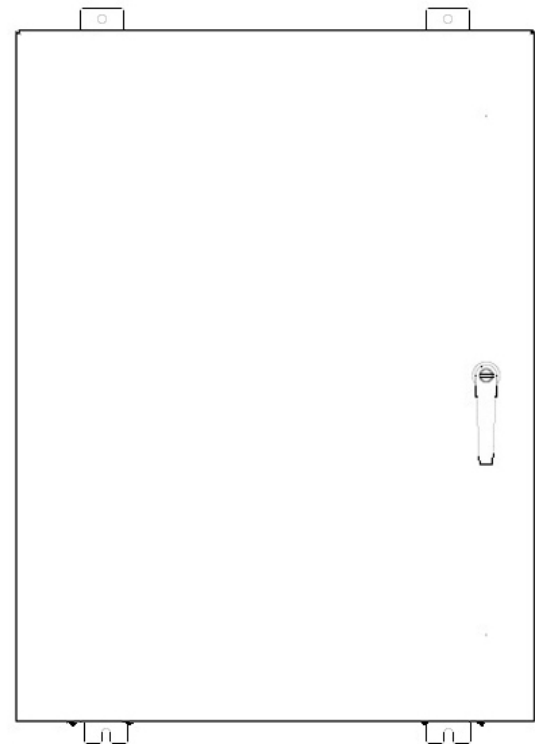
Shipment: Unpacking and Inspection

NOTICE

Be careful in the use of sharp object when cutting packaging as damage to the outer enclosure may result.

Perform a visual inspection to ensure the door and handle are in functioning condition and that the panel integrity is intact.

Figure 1



Front view with mounting holes

Initial Installation (for Input and Output Panels)

The installation of ASCO Series 300 Quick Connect Power Panels should be carried out by qualified personnel in accordance with local electrical codes.

The ASCO Series 300 Quick Connect Power Panel must be installed in conjunction with a transfer switch.

The transfer switch shall not have a rating greater than the ASCO Series 300 Quick Connect Power Panel.

Step 1: Fasten the ASCO Series 300 Quick Connect Power Panel to secure location

NOTICE

The ASCO Series 300 Quick Connect Power Panel weighs 58 lbs. without attached cables.

1. The panel should be located so there is adequate room for the externally connected cables to hang below the panel
 - A. Typically allow a minimum of 36" clearance from the bottom of the panel to finished ground level
2. Installation must be level and plumb to allow for proper drainage from ASCO Series 300 Quick Connect Power Panel weep holes
3. Fastening onto an external wall using 3/8" fasteners must be completed prior to proceeding with any terminations (See Figure 1 for hole spacing)

Step 2: Installing the Conduit

NOTICE

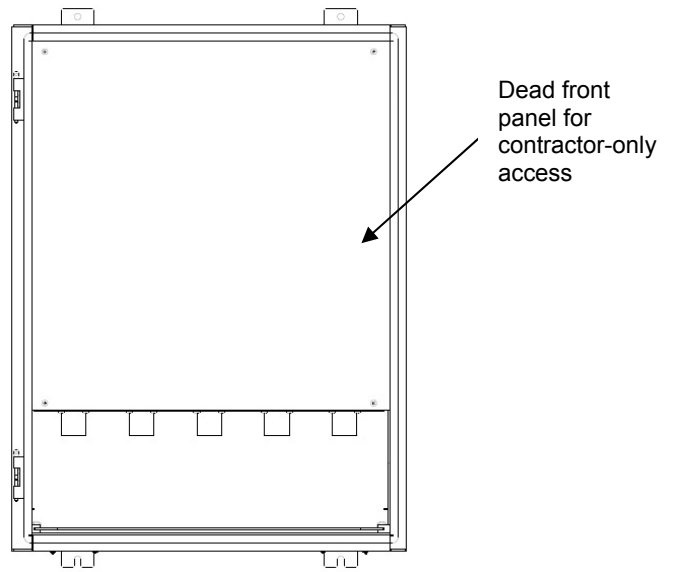
Conduit to enter through the top of the device

To maintain TYPE 3R Rating compliance for the enclosure, proper sealing procedures must be followed. This is to include, but not limited to, the use of proper gaskets.

In order to prevent enclosure damage and to attain the enclosure requirements, the conduit must be aligned to prevent unnecessary stress on the enclosure walls.

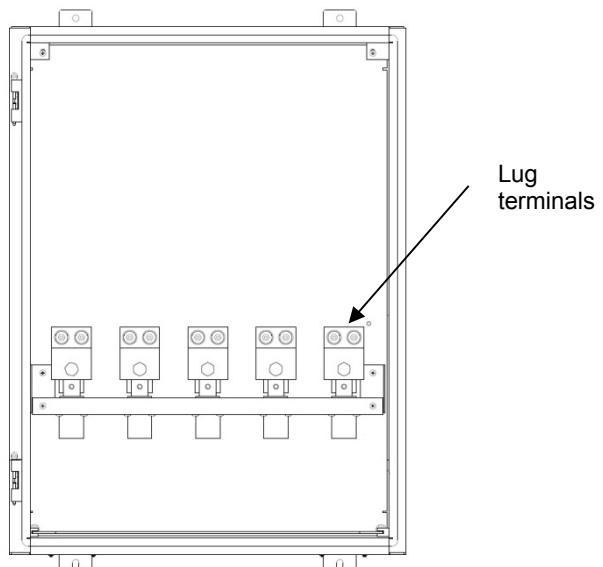
1. Open upper to door to expose dead front panel
2. Unfasten the dead front panel by removing the four (4) Phillips-headed 10-32 x 1/2" screws securing it (See Figure 2 and 3)
3. Conduit to be sized according to cabling rating
4. It is recommended that a knockout punch be used to cut hole for conduit
 - A. Place the punch on the inside of the enclosure and draw the punch through to the die on the outside.
5. Vacuum entire upper chamber to ensure no shavings are left behind

Figure 2



Front view with hinged cover removed

Figure 3



Front view with dead front panel removed

Installation -Input Panels

This section is for Installation of Input Panels. For Installation of Output Panels proceed to Page 8.

Step 3: Wiring the Lug Terminals



Ensure circuit breakers are OFF and the transfer switch is locked out from utility power prior to connection.

Failure to install transfer switch will create the potential for the generator to energize utility lines and endanger utility personnel. Conversely, utility lines may energize the ASCO Series 300 Quick Connect Power Panel and endanger generator personnel.

The ASCO Series 300 Quick Connect Power Panel is for the connection of a generator to the source terminals of a transfer switch, such that the inlets are only energized from the generator.

1. Pull the cables for the transfer switch to the ASCO Series 300 Quick Connect Power Panel
2. Beginning with the ground, strip and install the cables in the appropriate compression terminals

NOTICE

The terminals can accommodate #2 to 600MCM, Copper wire only

3. Tighten terminal screws to 375 lb-in torque each
 4. If metallic conduit is used, connect ground wire from ground bushing on conduit to the ground connection point in the upper right quadrant of the panel
- A. Ground conductor must be a minimum of #3 AWG

NOTICE

Conduit shall NOT be relied upon to provide grounding protection to tap box

5. Continue to connect the neutral and then the phases
6. Vacuum entire upper chamber to ensure no metal shavings are left behind
7. Replace dead front panel door and secure using four (4) 10-32 x 1/2" Phillips-headed screws



Three phase power systems consist of three phase or hot conductors that are shifted by 120 degrees. Three phase loads such as motors may only work properly if the phases are connected in the correct order. Some motors may work when connected improperly, but will operate backwards. Utility power and electrical generators may be wired either in a clockwise or counter-clockwise order. It is important that any generator connected to the ASCO Series 300 Quick Connect Power Panel is connected in the same rotation (clockwise or counter-clockwise) as the utility power.

Step 4: Determine Phase Rotation

This information will be needed when connecting a generator.

1. Pull Determine phase rotation of the utility power.
- A. Connect a phase rotation meter to a three phase power source in the building and record whether the building is wired clockwise or counter-clockwise
2. Apply the provided label to the inside of the ASCO Series 300 Quick Connect Power Panel on the inside of the cam connection chamber door. (Figure 4)

Figure 4



Place rotation label here

Step 5: Conduct a safety test to ensure proper installation

Do not attempt to use the ASCO Series 300 Quick Connect Power Panel prior to installation and completing the Pre-Operation and Maintenance Checklist under Appendix A.

Set-up

Step 6: Review Pre-Operation Checklist under Appendix A prior to operation (pg. 8)



DO NOT ATTEMPT CONNECTION WHILE CIRCUITS ARE LIVE

- Do not use cables if they appear frayed
- Do not use cable if connectors or plug do not seat properly
- Do not use cables if any copper cabling is exposed
- To limit risk of shock, disable generator automatic start to prevent unintended starting

Step 7: Determining phase rotation of generator

1. Disconnect generator from all loads if needed
2. Connect a phase rotation meter to the output phases of the generator
3. Record generator phase rotation (clockwise or counter-clockwise)

Step 8: Making Cam Connections

1. Open chamber door
2. Feed ground (green) cable through appropriate port in bottom
3. Complete the Connection
Proper connection (See Figure 5):
 - A. Grasp connector jacket and firmly insert cam connector into cam plug
 - B. Push on cam connector jacket until connector fully seats in cam plug
 - C. Rotate cam connector jacket counterclockwise until it stops

Figure 5



4. Complete the Neutral (white) connection
Proper connection (See Figure 5):
 - A. Grasp connector jacket and firmly Insert cam connector into cam plug
 - B. Push on cam connector jacket until connector fully seats in cam plug
 - C. Rotate cam connector jacket counterclockwise until it stops
5. Complete the Phase (hot) connections
 - A. Should the phase rotation of the generator (as determined in Step 7.3. above) and utility power (label found on the inside of the door for the Cam connection chamber) match, connect the Hots as follows:

Generator Hot	ASCO Series 300 Quick Connect Power
A	A
B	B
C	C

Should the phase rotation of the generator (as determined in Step 7.3. above) and utility power (label found on the inside of the door for the Cam connection chamber) NOT match, connect the Hots as follows:

Generator Hot	ASCO Series 300 Quick Connect Power
A	B
B	A
C	C

Proper connection (See Figure 5):

- A. Grasp connector jacket and firmly insert cam connector into cam plug
 - B. Push on cam connector jacket until connector fully seats in cam plug
 - C. Rotate cam connector jacket counterclockwise until it stops
6. Make sure all connections are right and secure

Step 9: Close chamber door, and secure allowing cables to exit cable ports at bottom.

Set-up – Continued

Step 10: Powering Up



Power MUST BE supplied from a single generator

1. Start generator per manufacturer instructions
2. Toggle the transfer switch, diverting power from utility to generator feed

Step 11: Disconnection



DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE

1. To limit risk of shock, disable generator automatic start to prevent unintended starting
 - Unlock and open chamber door
 - Order of disconnect
2. Disconnect the Phase (hot) connections, beginning with the furthest to the left
Proper disconnection (See Figure 5):
 - A. Grasp connector jacket firmly and rotate cam connector clockwise until it stops
 - B. Firmly pull on connector until it separates from the plug
 - C. Set aside
3. Continue with ALL Phase (hot) connections

4. Complete disconnect of ALL hot connections prior to proceeding
5. Disconnect the Neutral (white) connection.
Proper disconnection (See Figure 5):
 - A. Grasp connector jacket firmly and rotate cam connector clockwise until it stops
 - B. Firmly pull on connector until it separates from the plug
6. Set aside
Disconnect the Ground (green) connections.
Proper disconnection (See Figure 5):
 - A. Grasp connector jacket firmly and rotate cam connector clockwise until it stops
 - B. Firmly pull on connector until it separates from the plug
 - C. Set aside

Step 12: Close chamber door and secure.

Figure 5



Installation – Output Panels

Continued from page 4

Step 3: Wiring the Lug Terminals



Ensure circuit breakers are OFF and the transfer switch is locked out from Source power prior to connection.

Failure to install transfer switch will create the potential for the source to energize the ASCO Series 300 Quick Connect Output Power Panel and endanger installation personnel.

The ASCO Series 300 Quick Connect Output Power Panel is for the connection of a Load Bank to the Output terminals of a transfer switch.

1. Pull the cables from the load output terminals of transfer switch to the ASCO Series 300 Quick Connect Power Panel
2. Beginning with the ground, strip and install the cables in the appropriate compression terminals

NOTICE

The terminals can accommodate #2 to 600MCM, Copper wire only

3. Tighten terminal screws to 375 lb-in torque each
 4. If metallic conduit is used, connect ground wire from ground bushing on conduit to the ground connection point in the upper right quadrant of the panel
- A. Ground conductor must be a minimum of #3 AWG

NOTICE

Conduit shall NOT be relied upon to provide grounding protection to tap box

5. Continue to connect the neutral and then the phases
6. Vacuum entire upper chamber to ensure no metal shavings are left behind
7. Replace dead front panel door and secure using four (4) 10-32 x 1/2" Phillips-headed screws

Step 4: Conduct a safety test to ensure proper installation

Do not attempt to use the ASCO Series 300 Quick Connect Output Power Panels prior to installation and completing the Pre-Operation and Maintenance Checklist under Appendix A.

Set-up

Step 5: Review Pre-Operation Checklist under Appendix A prior to operation (pg. 10)



DO NOT ATTEMPT CONNECTION WHILE CIRCUITS ARE LIVE

- Do not use cables if they appear frayed
- Do not use cable if connectors or plug do not seat properly
- Do not use cables if any copper cabling is exposed
- To limit risk of shock, disable generator automatic start to prevent unintended starting

Step 6: Making Cam Connections

1. Open chamber door
2. Feed ground (green) cable through appropriate port in bottom
3. Complete the Connection
Proper connection (See Figure 6):
 - A. Grasp connector jacket and firmly insert cam connector into cam plug
 - B. Push on cam connector jacket until connector fully seats in cam plug
 - C. Rotate cam connector jacket counterclockwise until it stops

Figure 6



4. Complete the Phase (hot) connections
5. Proper connection (See Figure 6):
 - A. Grasp connector jacket and firmly insert cam connector into cam plug
 - B. Push on cam connector jacket until connector fully seats in cam plug
 - C. Rotate cam connector jacket counterclockwise until it stops
6. Make sure all connections are right and secure

Step 7: Powering Up



Power MUST BE supplied from a source wired to a Transfer Switch

1. Toggle the transfer switch, diverting power from the building loads to the load bank.

Step 8: Disconnecting Circuits



DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE

1. To limit risk of shock, disable generator automatic start to prevent unintended starting
 - Unlock and open chamber door
 - Order of disconnect
2. Disconnect the Phase (hot) connections, beginning with the furthest to the left
Proper disconnection (See Figure 7):
 - A. Grasp connector jacket firmly and rotate cam connector clockwise until it stops
 - B. Firmly pull on connector until it separates from the plug
 - C. Set aside
3. Continue with ALL Phase (hot) connections

Figure 7



4. Complete disconnect of ALL hot connections prior to proceeding
5. Disconnect the Ground (green) connections. Proper disconnection (See Figure 7):
 - A. Grasp connector jacket firmly and rotate cam connector clockwise until it stops
 - B. Firmly pull on connector until it separates from the plug
 - C. Set aside

Step 9: Close chamber door and secure.

Appendix A

Pre-Operation Checklist

1. Visual inspection of enclosure
 - Ensure the ASCO Series 300 Quick Connect Power Panel is firmly secured to the building
 - Review conduit connection for signs of leakage
 - Ensure enclosure is intact with no signs of cracking
2. Open the chamber door
 - Ensure the chamber is dry and free of debris
 - Ensure that gaskets are pliable and no cracking exists
 - Ensure that door hinges are secure and lubricated
3. Remove dead front panel
 - Ensure that all load terminals are securely fastened and that the set screws are set at 375 lb-in torque each
 - Ensure electrical connections are intact with no signs of corrosion or cracking
4. Review all safety labels and ensure that they are present and legible
 - Replace as needed
5. Inspect all portable cables
 - Do not use cables if they appear frayed
 - Do not use cable if connectors or plug do not seat properly
 - Do not use cables if any copper wiring is exposed
6. ASCO Power Services are available to assist in resolving issues. If you have any questions or need technical advice or suggestions regarding this product, please contact ASCO Power Technologies at 1-800-800-2726(ASCO) or e-mail powerwarranty@ascopower.com

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