ASCO Power Technologies®

SERIES 300
Quick Connect Input and Output Power Panels
1200-1600 Amp
Installation Manual

381333-465 D
2/2023

⚠ 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 Power Panels. Be certain to read and understand all instructions prior to installation and operation.

NOTICE

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

ASCO SERIES 300 Quick Connect Input Power panels are ETL listed to UL1008 standards. ASCO SERIES 300 Quick Connect Output Panels are ETL listed to UL 891 standards 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 years 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

Schneider Electric

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Prior to Installation: Site Preparation

Prepare installation site according to local codes.

The ASCO SERIES 300 Quick Connect Power Panels are to be set on an exterior pad and secured to a building or secured to a pad using 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 Input Power Panel (3QCN) 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.

– While lock protection is provided, 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 all hasps are in functioning condition and that the panel integrity is intact.

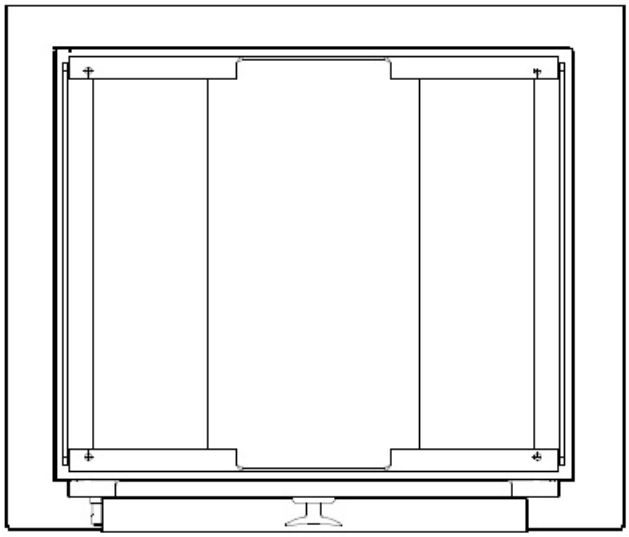

Figure 1

Installation

WARNING

ASCO SERIES 300 Quick Connect Power Panels are top heavy and therefore the center of gravity is well above the forklift slots (See Figure 2). Care must be taken to secure the device when it is lifted and moved.

– Please note that the 1200 Amp versions weigh approximately 485 pounds and the 1600 Amp versions weigh approximately 505 pounds

The installation of the ASCO SERIES 300 Quick Connect Power Panel 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.

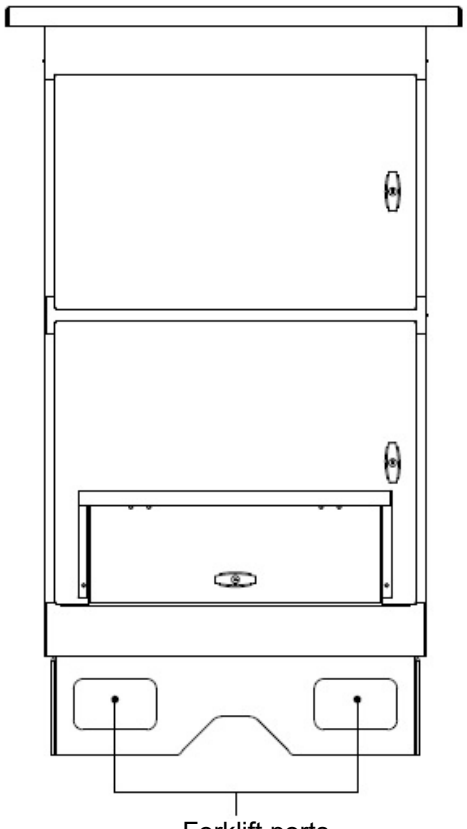

Figure 2

Step 1: Fasten the ASCO SERIES 300 Quick Connect Power Panel to secure base

1. Base must be level and plumb to allow for proper drainage from ASCO SERIES 300 Quick Connect Power Panel weep holes
2. 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 (See Figure 3)

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.

1. Open upper to door to expose termination chamber
2. Conduit to be sized according to cabling rating
3. It is recommended that a knockout punch be used to cut hole for conduit. Place the punch on the inside of the enclosure and draw the punch through to the die on the outside.
4. Vacuum entire upper chamber to ensure no shavings are left behind

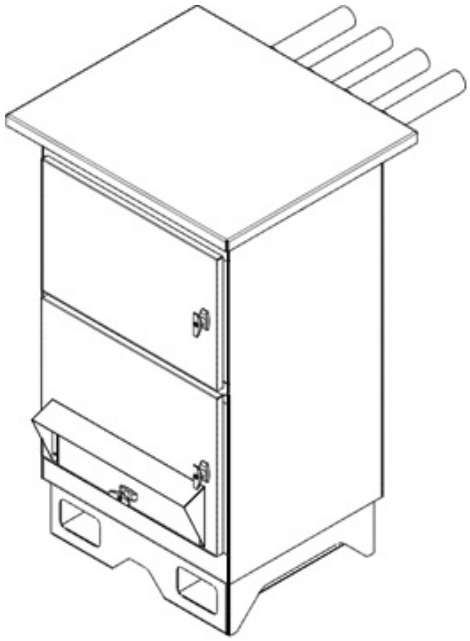

Figure 3

Installation - Input Panels

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

Step 3: Wiring the Bus Bars

WARNING

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 use only for connection of a generator to the source terminals of a transfer switch, such that the inlets are only energized from the generator.

1. Secure ring terminals on ends of cable

– The recommended input (contractor direct wire) wire gauge for this unit is 350 MCM

– Terminal crimp rings to have 1/2” opening

2. Secure ring terminals to bus bar

– Use 1/2” bolts tightened to ninety-eight (98) foot pounds of torque

3. Secure a solid and permanent electrical ground between the building ground point and the ASCO SERIES 300 Quick Connect Power Panel.

NOTICE

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

Vacuum entire upper chamber to ensure no metal shavings are left behind

WARNING

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 counterclockwise 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 counterclockwise) 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)

Place rotation label here

Figure 4

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. 11)

WARNING

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 counterclockwise)

Step 8: Making Cam Connections

1. Open lower chamber door
2. Complete the Ground (green)connections, beginning with the furthest from the from door to the left
   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

3. Continue with connections, beginning with the rear of the cabinet and working forward
4. Complete ALL Ground connections working from back to front prior to proceeding
5. Complete the Neutral (white) connections, beginning with the furthest from the front door

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. Continue with connections, beginning with the rear of the cabinet and working forward

Set-up – Continued

7. Complete the Phase (hot) connections

   A. Should the phase rotation of the generator (as determined in Step 5.B.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

   B. 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 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

8. Continue with connections, beginning with the rear of the cabinet and working forward

9. Complete ALL Phase connections working from back to front prior to proceeding

10. Make sure all connections are right and secure

Step 9: Close and lock lower chamber door, allowing cables to exit through smaller cable door (See Figure 6)

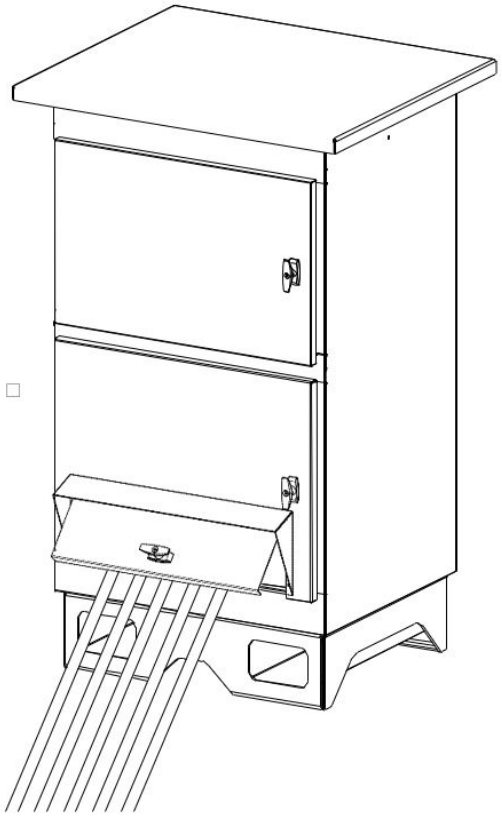

Figure 6

Step 10: Powering Up

WARNING

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

WARNING

DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE

1. To limit risk of shock, disable generator automatic start to prevent unintended starting

– Open lower chamber door

– Order of disconnect

2. Disconnect the Phase (hot) connections, beginning with the closest to the front door to the right. 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, beginning with the front of the cabinet and working from front to back

Figure 7

4. Complete disconnect of ALL hot connections prior to proceeding
5. Disconnect the Neutral (white) connection, beginning with the closest to the front door.

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

Continue with ALL Neutral (white) connections, beginning with the front of the cabinet and working from front to back

6. Complete disconnect of ALL Neutral connections prior to proceeding
7. Disconnect the Ground (green) connections, beginning with the closest to the front door

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

8. Continue with ALL Ground (green) connections, beginning with the front of the cabinet and working rearward
9. Complete disconnect of ALL Neutral connections prior to proceeding

Step 12: Secure the three (3) keylocks to complete procedure

Installation – Output Panels

Continued from page 4

Step 3: Wiring the Bus Bars

WARNING

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 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. Secure ring terminals on ends of cable

– The recommended input (contractor direct wire) wire gauge for this unit is 350 MCM

– Terminal crimp rings to have 1/2” opening

2. Secure ring terminals to bus bar

– Use 1/2” bolts tightened to ninety-eight (98) foot pounds of torque

3. Secure a solid and permanent electrical ground between the building ground point and the ASCO SERIES 300 Quick Connect Power Panel.

NOTICE

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

4. Vacuum entire upper chamber to ensure no metal shavings are left behind

Step 4: 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 5: Review Pre-Operation Checklist under Appendix A prior to operation (pg. 11)

WARNING

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 lower chamber door
2. Complete the Ground (green)connections, beginning with the furthest from the from door to the left
   Proper connection (See Figure 8):
   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 8

3. Continue with connections, beginning with the rear of the cabinet and working forward
4. Complete ALL Ground connections working from back to front prior to proceeding
5. Continue with connections, beginning with the rear of the cabinet and working forward

Set-up – *Continued*

6. Complete the Neutral (white) Connections (if applicable)
7. Complete the Phase (hot) connections

Proper connection (See Figure 8):

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

Step 7: Close and lock lower chamber door, allowing cables to exit through smaller cable door (See Figure 9)

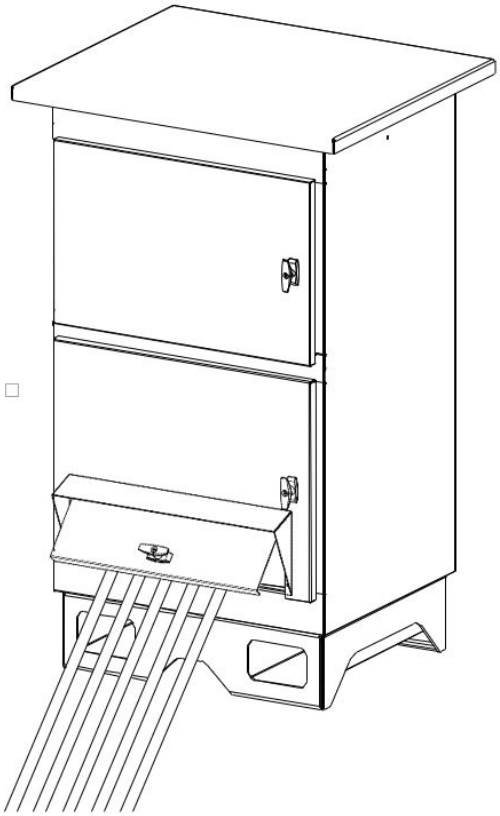

Figure 9

Step 8: Powering Up

WARNING

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

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

Step 9: Disconnection

WARNING

DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE

- Open lower chamber door
- Order of disconnect

1. Disconnect the Phase (hot) connections, beginning with the closest to the front door to the right.

Proper disconnection (See Figure 10):

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

2. Continue with ALL Phase (hot) connections, beginning with the front of the cabinet and working from front to back

Figure 10

3. Complete disconnect of ALL hot connections prior to proceeding
4. Continue with ALL Neutral (white) connections, (if applicable) beginning with the front of the cabinet and working from front to back

Proper disconnection (See Figure 10):

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

Disconnection – *Continued*

5. Complete disconnect of ALL Neutral connections prior to proceeding
6. Disconnect the Ground (green) connections, beginning with the closest to the front door

Proper disconnection (See Figure 10):

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

7. Continue with ALL Ground (green) connections, beginning with the front of the cabinet and working rearward
8. Complete disconnect of ALL Neutral connections prior to proceeding

Step 10: Secure the three (3) keylocks to complete procedure

Appendix A

Pre-Operation Checklist

1. Visual inspection of enclosure

– Ensure the ASCO SERIES 300 Quick Connect Power Panel is firmly secured to its base and/or building

– Review conduit connection for signs of leakage

– Ensure paint is intact with no signs of rust or corrosion

2. Open all chamber doors

– Ensure chambers are dry and free of debris

– Ensure that gaskets are pliable and no cracking exists

– Ensure that door hinges are secure and lubricated

– Ensure that keylocks are intact and operational

– Ensure that all load terminals are securely fastened and that the bolts are set at ninety-eight (98) foot pounds of torque

– Ensure paint is intact with no signs of rusting or corrosion

– Ensure electrical connections are intact with no signs of corrosion or cracking

3. Review all safety labels and ensure that they are present and legible

– Replace as needed

4. 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

5. 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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