Powerware Plus 36 Installation

Warning: Only qualified service personnel (such as a licensed electrician) should perform the UPS installation. Risk of electrical shock.

8 Installation

The following sections describe your UPS package and the installation and physical setup of the UPS, the options cabinet, and remote batteries.

Unpacking and Inspection

Upon receiving your UPS, optional battery cabinet(s), or options cabinet, carefully examine the packing containers for any signs of physical damage or leakage. Notify the carrier immediately if damage is present.

Carefully unpack the UPS and battery cabinets, making sure you retain the packaging materials for future shipment of the units. Examine each unit carefully. Immediately notify your distributor if you find any damage. Do not operate any unit that is leaking liquid, or if a white, powdery residue is present.

Site Preparation

For optimum system operation, be sure that your site conforms to the following specifications and requirements:

- The maximum elevation for normal operation is 5000 ft (1500 m). Derating is required for higher elevations.
- Equipment weights are provided for typical configurations (see page 32). Contact your local sales representative if additional information is needed.
- Additional battery cabinets may be added for extended battery time.
- The unit should be installed with these environmental specifications: operating temperature of 0˚ to 40˚C and humidity of 5% to 95% (noncondensing).

Important Safeguards

- Do not tilt the cabinet more than 12 degrees; the unit may tip over.
- Do not connect more than three battery cabinets to the UPS unit to avoid fire and electrical shock hazard.

Installing the UPS and Battery Cabinets

Warning: Only qualified service personnel (such as a licensed electrician) should perform the UPS installation. Risk of electrical shock.

To perform the Powerware Plus 36 installation, you need a 5/16″ hex-nut driver. Make sure that you read all of the caution and warning statements in “Safety Considerations” beginning on page *i* before performing the installation.

If your UPS is connected to a remote battery provided by another manufacturer, disregard all references to battery cabinets in this section and see “Installing Remote Batteries” on page 60 for more information on installation and configuration.

The following instructions assume you have already removed the unit and battery cabinets from the pallets according to the unloading instructions on the outside of the shipping box.

Use the following procedure to set up the UPS and battery cabinets:

1. Place the UPS and battery cabinet(s) near the operating site. Make sure the air vents and air exhausts are free of obstructions and the UPS is not near a heat source or in direct sunlight.

   NOTE: *It is recommended to allow a minimum of 3′ of space on the left side of the unit for access by qualified service personnel and a minimum of 8″ of space on the rear side for proper ventilation.*

2. Remove the mounting bars from the pallets.

3. Steps 4–7 are for seismic mounting only. If you are not installing seismic mounting, skip to Step 8.

4. A seismic installation of the UPS requires that the mounting bars be bolted to the floor. See Figure 6 for a detailed drill and mounting pattern.

   NOTE: *For Zone 4, it is recommended to use 5/16″ self-drill bolts and hardware with 1 5/16″ minimum embedment for 3000PSI-strength concrete. Refer to your local building codes for seismic mounting requirements.*

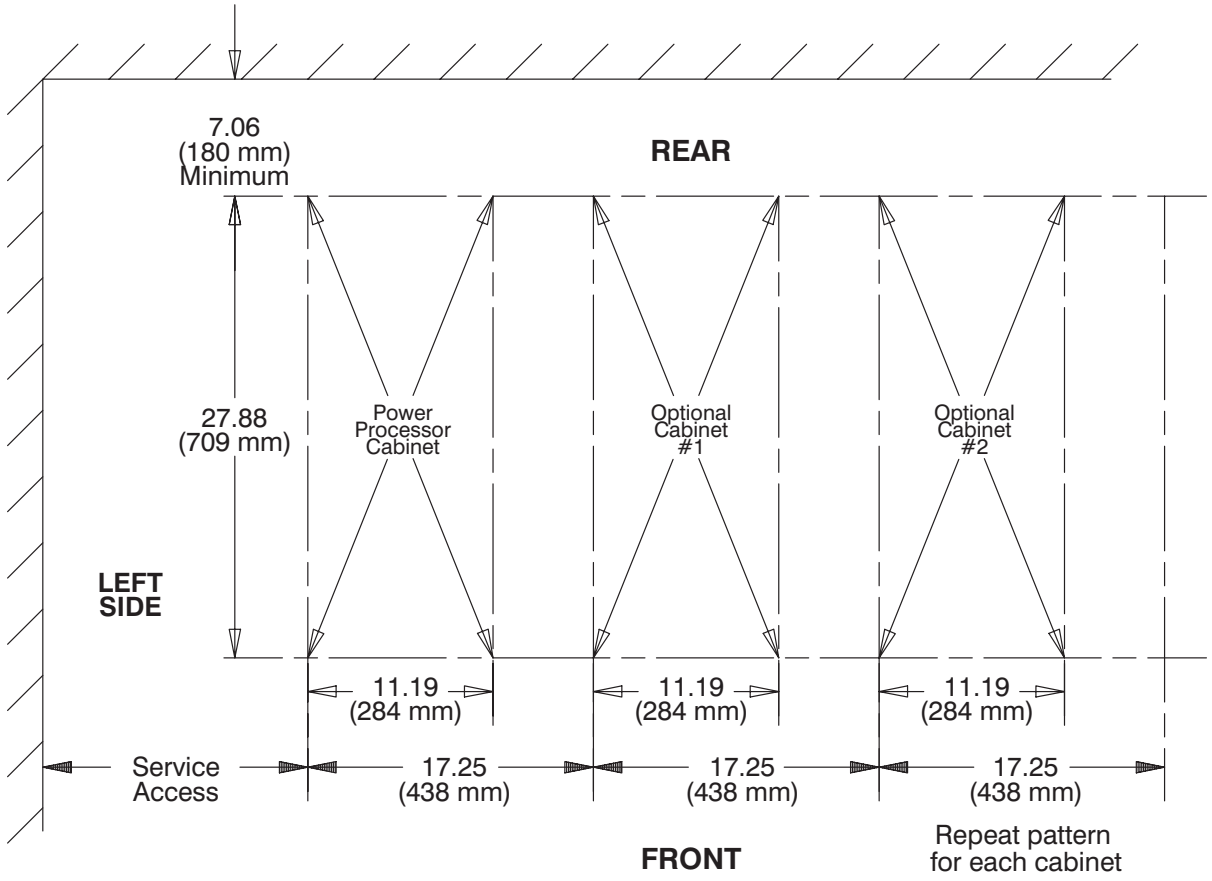


Figure 6. Seismic Installation Mounting Pattern

5. Attach one mounting bar with customer provided bolts to the floor for rear of each cabinet to be installed.

NOTE: *The floor mounting bolts are customer provided and should fit the 0.438″ diameter mounting holes on the mounting bars.*

6. Position the cabinets into the approximate final operating position.

7. Attach mounting bar with customer provided bolts to the floor at the front of each cabinet as shown in Figure 7.

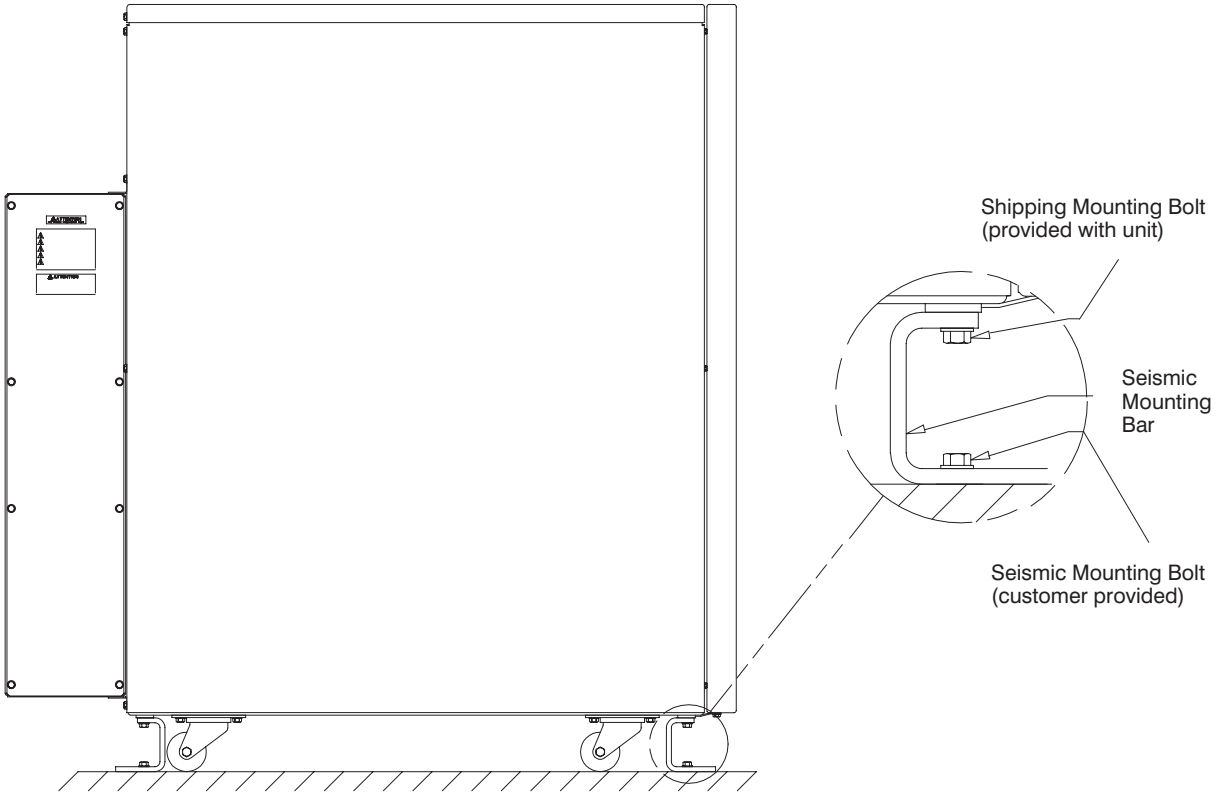


Figure 7. Seismic Mounting Detail (Left Side View)

8. Secure cabinet to mounting bars with shipping mounting bolts.

9. Position the cabinets into the approximate final operating position.

10. Lower all leveling feet by turning leveling feet to the left. Lower leveling feet until the cabinet cannot roll on its casters.

11. Tighten locking nuts against the cabinet on rear leveling feet only.

Electrical Installation

Warning: Only qualified service personnel (such as a licensed electrician) should perform the electrical installation. Risk of electrical shock.

Refer to your national and local electrical codes for acceptable external wiring practices. Material and labor for the external wiring are customer-supplied. An external protective device for the input source must be provided and sized for the currents indicated on the UPS nameplates.

NOTE: *The maximum permissible input fault-current is 65,000 amps. Upstream protection must be coordinated with the load current requirements under nominal as well as low-line and overload conditions. The recommended input stream service protection is 125 amps.*

The UPS must be grounded at the input terminal block to a single-point local or utility earth ground. The ground conductor should be sized according to your national and local electrical codes. In the United States, the output is a separately-derived source.

If you are using remote batteries, a DC breaker suitable for branch circuit protection is required. the DC breaker is customer-supplied and must be rated at 250V, 75A. The maximum fault current from a remote battery cannot be more than 6000 amps.

See Figure 8 for the location of the power cable terminal block and the conduit access. Use the following procedure to perform the electrical installation for your UPS.

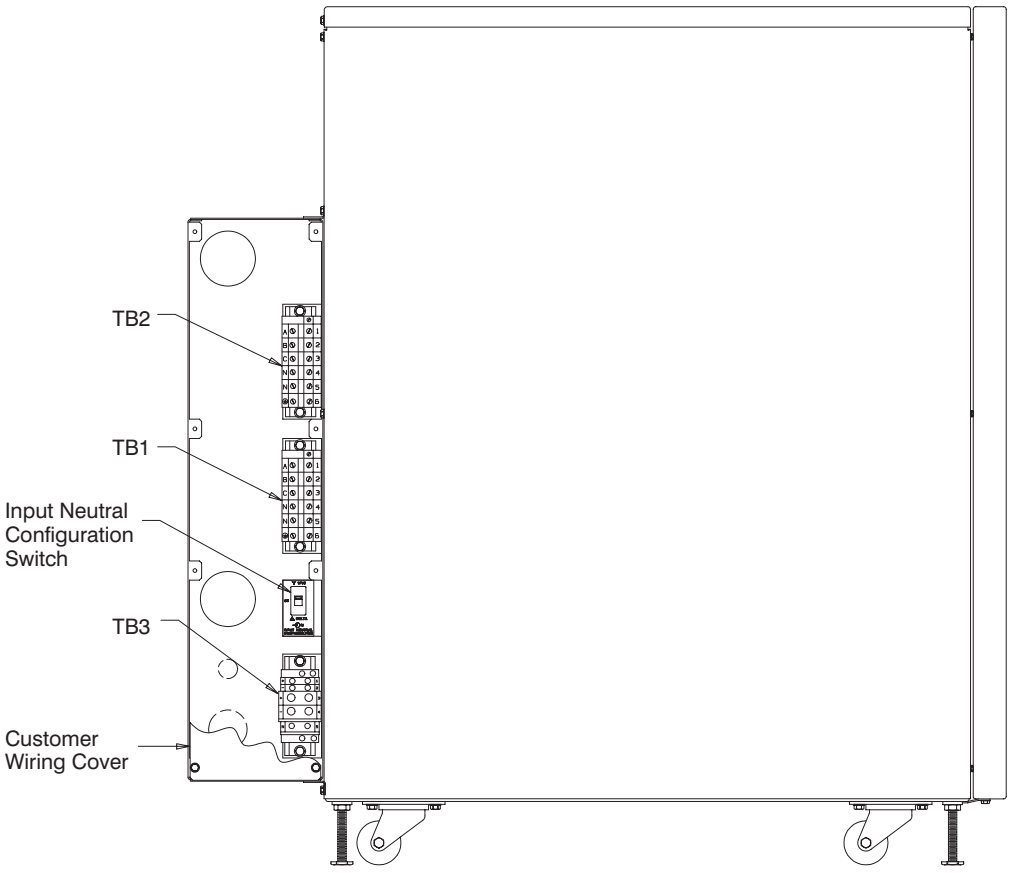


Figure 8. Power Processor Cabinet (Left Side View)

1. Determine your equipment's grounding requirements according to your local electrical code.
2. Remove the screws on the customer wiring cover of the power processor cabinet rear panel with a 5/16″ hex-nut driver (see Figure 8 on page 41).
3. Hardwire the input and output terminations for the UPS. See the following table for specifications and Figure 9 for terminal blocks.

NOTE: *If you are using an options cabinet, do not connect the input and output wiring. Continue to "Final Configuration" on page 44.*

Caution: The UPS contains its one energy source (battery). There is high voltage present at terminals 8 and 9 (terminals for remote battery connection) when a battery cabinet is connected to the UPS.

Power Processor Cabinet Customer Cable Terminations				
Wire Function		**Terminal Position**	**Terminal Wire Size Rating**	**Suggested Wire Size***
Input	Phase A	TB1-1	6 – 1/0 AWG (16 – 50 mm²)	1/0 AWG (50 mm²)
	Phase B	TB1-2		
	Phase C	TB1-3		
	Neutral**	TB1-4		
	Neutral**	TB1-5		
	Ground	TB1-6	6 – 2 AWG (16 – 35 mm²)	6 AWG (16 mm²)
Output	Phase A	TB2-1	6 – 1/0 AWG (16 – 50 mm²)	1/0 AWG (50 mm²)
	Phase B	TB2-2		
	Phase C	TB2-3		
	Neutral	TB2-4		
	Neutral	TB2-5		
	Ground	TB2-6	6 – 2 AWG (16 – 35 mm²)	6 AWG (16 mm²)
Remote EPO	+	TB3-1	18 – 8 AWG (0 – 6 mm²)	10 AWG (6 mm²)
	–	TB3-2		
Remote Battery	+	TB3-3	6 – 1/0 AWG (16 – 50 mm²)	1/0 AWG (50 mm²)
	–	TB3-4		
Neutral Bonding		TB3-5	8 – 4 AWG (6 – 16 mm²)	Provided

* Use 75°C copper wire. Suggested wire size is based on 3600-036K full load ratings applied to NEC Code Table 310-16. Both input and output neutral connections require a total of two wires at the suggested size (one wire per terminal position).

** Input neutral is required if single-phase loads are to be supplied, and if the options cabinet has input or output auto-transformers (380–480V three phase).

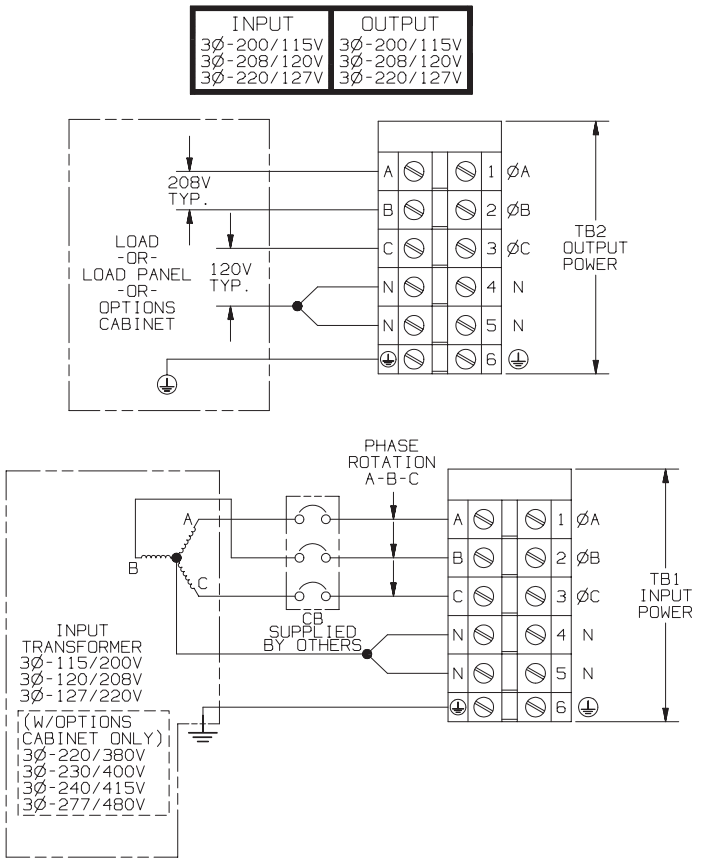


Figure 9. Power Cable Terminal Blocks (1 and 2)

4. As part of the branch circuit that supplies this unit, install an insulated grounding conductor. Use the following specifications for the grounding conductor that connects to input terminal block.

- **Material and insulation thickness:** must be identical to the grounded and ungrounded branch-circuit supply conductors
- **Color:** should be green with or without a yellow stripe(s)
- **Ground:** should be grounded to the earth ground in the service equipment or in the supply transformer (if supplied by a separately-derived system)

NOTE: *All attachment plug-receptacles on or connected to your UPS or system equipment must be a grounding type. The grounding conductors serving these receptacles must be connected to the earth ground in the service equipment.*

5. The neutral conductor of the output circuit is bonded to the chassis/ground as configured at the factory. If the output neutral is not to be grounded, remove the bonding wire (green with yellow stripe) that runs from TB3-5 to the frame ground (see Figure 10).

NOTE: *It is recommended to remove the bonding wire for a three-wire delta output.*

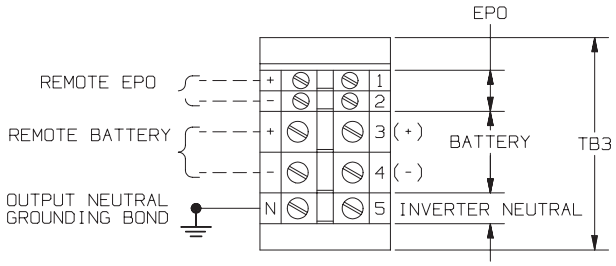


Figure 10. Terminal Block (3)

6. If you are using a Remote Emergency Power-Off switch, hardwire the terminal block positions 1 and 2. See the termination table on page 42 for proper connections. See Figure 8 on page 41 for the connection locations.

   The REPO switch is a customer-supplied switch that can disconnect the UPS output voltage from your protected equipment. The REPO function activates when the REPO wires are shorted together. Use the following specifications for the REPO switch:

   - The switch should be a wall-mounted, momentary-contact, normally open, pushbutton switch.
   - Minimum ratings of 120 VAC and 125 mA.

   Caution: The REPO wires are at high-voltage potential (240V). Refer to your local electrical code for proper installation of the high-voltage REPO wires.

7. Replace the terminal clock plate and the conduit plate on the UPS rear panel.
8. Continue to the following section, “Final Configuration.”

Final Configuration

After you have installed the UPS, perform the following steps for the bypass and input configuration.

Bypass Configuration

Caution: Any change to the bypass configuration must be made when there is no power to the unit. Failure to do so may result in damage to the load.

1. Determine the input and output voltage and frequency.
2. Locate the Bypass Configuration switch and Maintenance Bypass switch located behind the breaker panel door on the power processor cabinet (see Figure 13 on page 46).

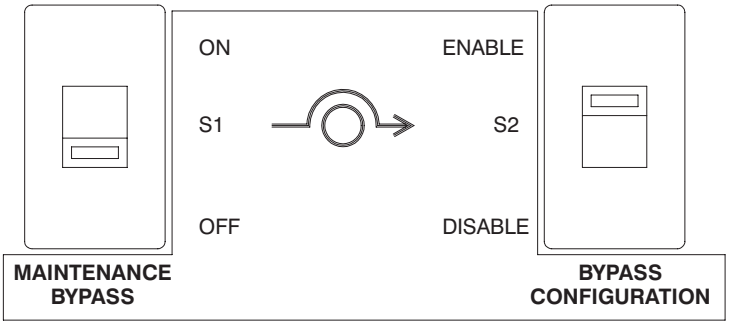


Figure 11. Maintenance Bypass and Bypass Configuration Switches

3. Set the Maintenance Bypass switch to the OFF (O) position.

NOTE: *If you are using an options cabinet, this is a mandatory setting.*

4. If your UPS uses automatic or maintenance bypass, set the Bypass Configuration switch to the ENABLE position.

5. If your UPS does not use automatic or maintenance bypass, set the Bypass Configuration switch to the DISABLE position. *This is a mandatory setting for 400-Hz units.*

Input Configuration

1. Locate the Input Neutral Configuration switch located on the rear wiring panel of the power processor cabinet (see Figure 8 on page 41).

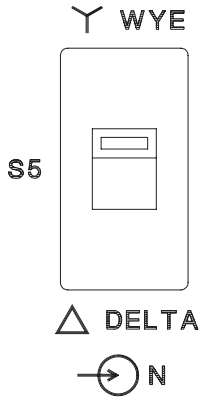


Figure 12. Input Neutral Configuration Switch

2. If the UPS has a neutral input (WYE input), set the switch to the WYE position.

3. If the UPS does not have a neutral input (DELTA input), set the switch to the DELTA position.

NOTE: *The unit is factory-configured with the switch in the WYE position.*

4. Make sure that the Maintenance Bypass switch is set to the OFF position.

Joining the Cabinets

1. Remove the screw located at the bottom of the power processor cabinet front cover (see Figure 13). Retain the screw.

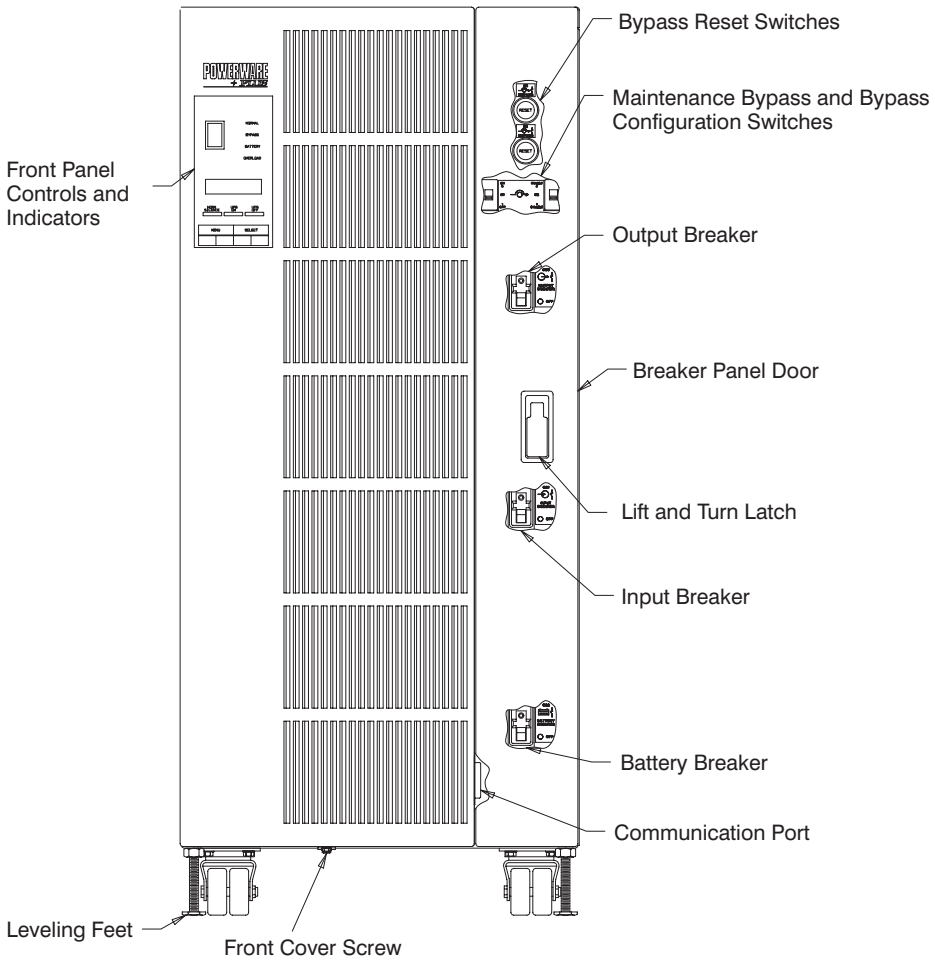


Figure 13. Power Processor Cabinet (Front View)

2. Open the breaker panel door and lift the front cover upward before pulling forward. Carefully pull the front cover of the power processor cabinet forward to expose the left front screw of the top cover. Note that the electrical connections to the front panel controls remain connected.

3. Remove the four #10 hex-head screws located behind the breaker panel door, the front cover, and in the back (see Figure 14). Retain the screws.

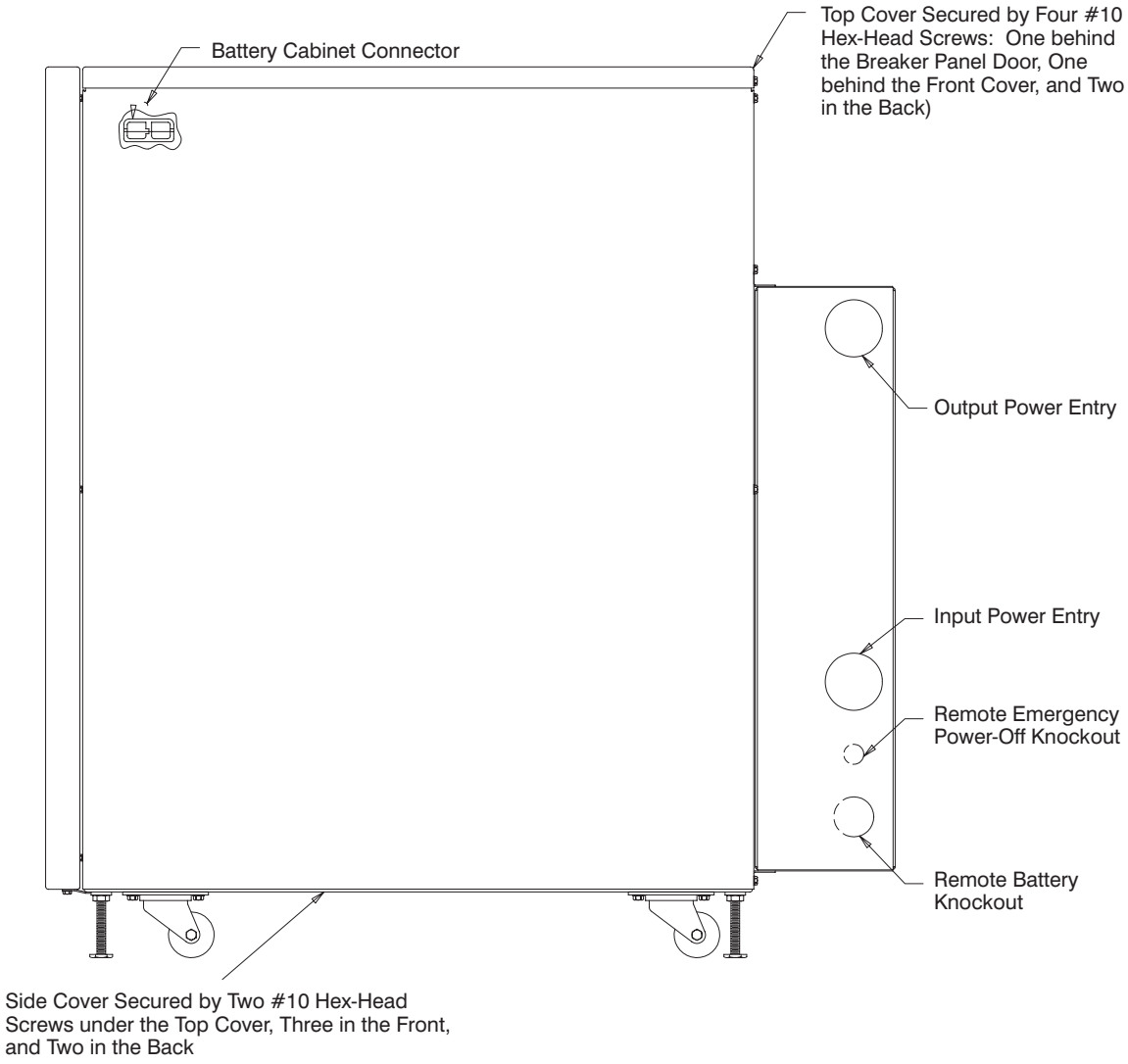


Figure 14. Power Processor Cabinet (Right Side View)

4. Lift and remove the top cover.
5. Temporarily put the front cover back on to avoid damage to the electrical connections during the remainder of the cabinet joining operation. It will need to be removed again when the top cover is replaced.
6. Remove the seven #10 hex-head screws for the right side cover (see Figure 14). Retain the screws.
7. Lift and remove the right side cover.
8. Roll the next cabinet(s) into place (options cabinet first, if one is to be installed).
9. Remove front and top covers of cabinets to be joined. Continue to Step 10 for removing the options cabinet covers. Skip to Step 14 on page 49 for removing battery cabinet covers.
10. Lift and turn the latch located on the front cover of options cabinet (see Figure 15).

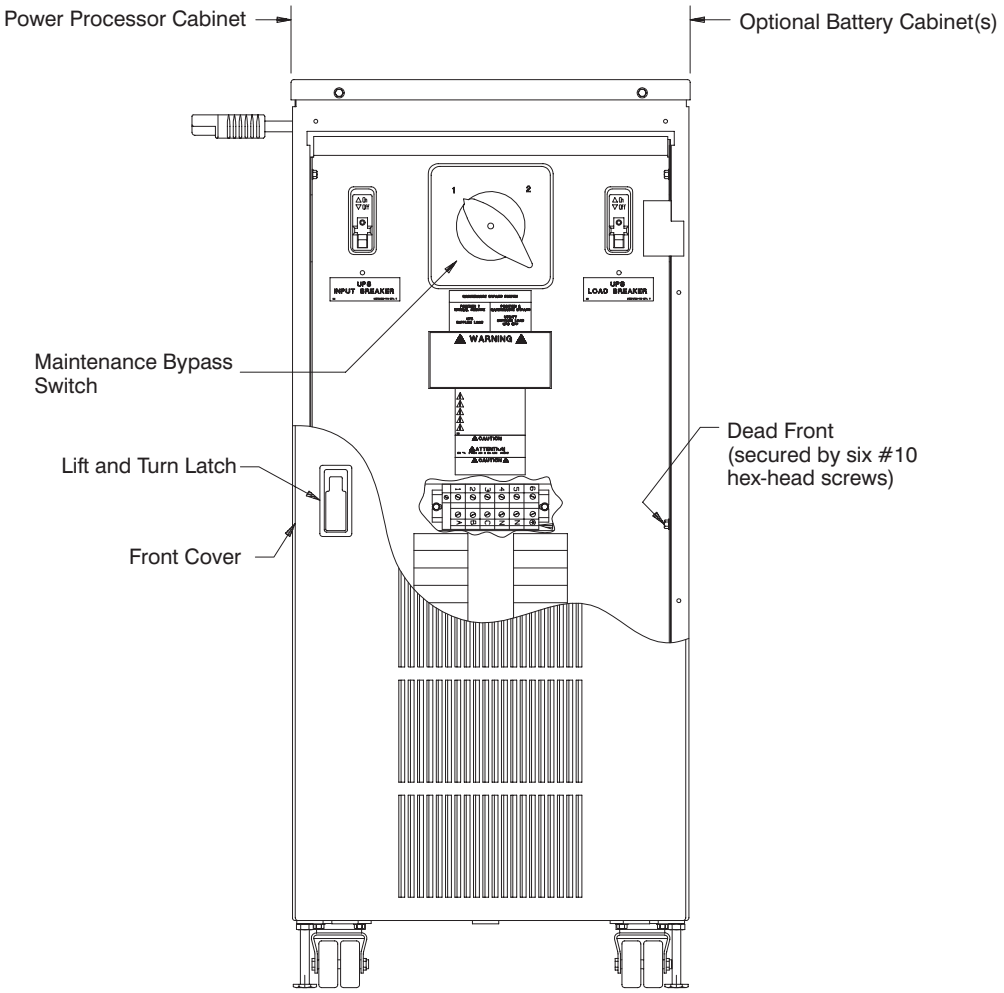


Figure 15. Options Cabinet (Front View)

11. Lift the front cover off the hinges.

12. Remove the two #10 hex-head screws in the back of top cover. Retain the screws.

13. Remove the two #10 hex-head screws located in the front of top cover behind the door. Retain the screws.

14. To remove the battery cabinet front cover, remove the #10 hex-head screw from front cover (see Figure 16).

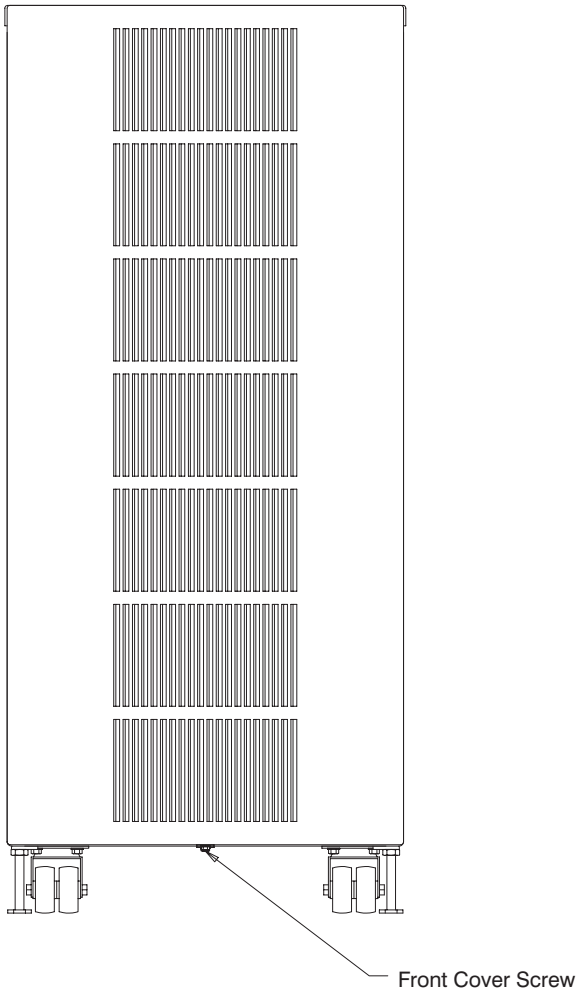


Figure 16. Battery Cabinet (Front View)

15. Lift the cover up and pull forward to remove.

16. To remove the battery cabinet top cover, remove the two #10 hex-head screws in back and then the two in front.

17. Lift the cover up and pull forward to remove.

18. Locate the joining kit secured to the back of the cabinet to be joined.

19. Remove the screws securing the adjoining top corners of the rear covers of both cabinets (see Figure 17).

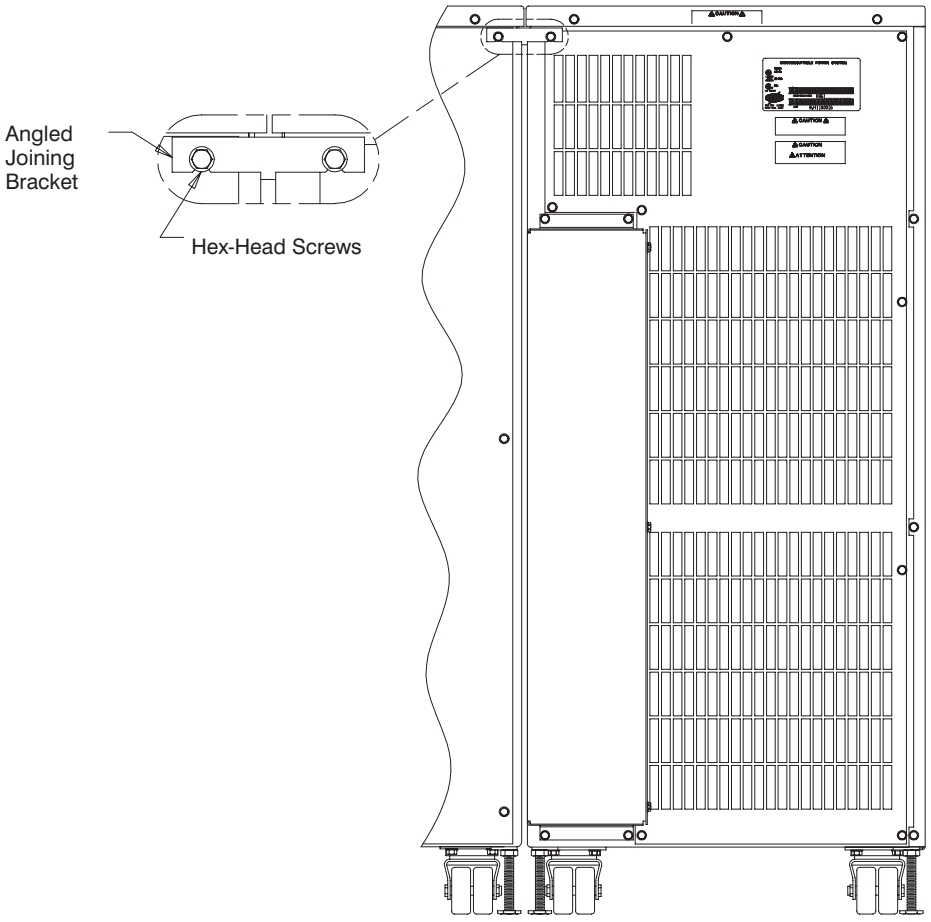


Figure 17. Cabinet Joining Detail (Rear View)

20. Install one of the angled joining brackets at that location with the screws just removed (see Figure 18).

21. Join the top front corners of the cabinets together with the other angled joining bracket.

22. Place the angled joining brackets over screw holes.

23. Replace the screws and tighten into place.

Securing the Joined Cabinets

1. For seismic mounting, continue to the following step. For normal mounting, skip to Step 4.

2. Attach a mounting bar to the floor at the front of the cabinet.

3. Secure the cabinet to both the front and rear mounting bars with the screws provided with the unit. Skip to Step 6.

4. Lower the leveling feet so that cabinet no longer rolls on its casters.

5. Tighten locking nuts against cabinet for rear wheels only.

6. Place the flat joining racket above the locking nut on the front leveling feet (see Figure 17).

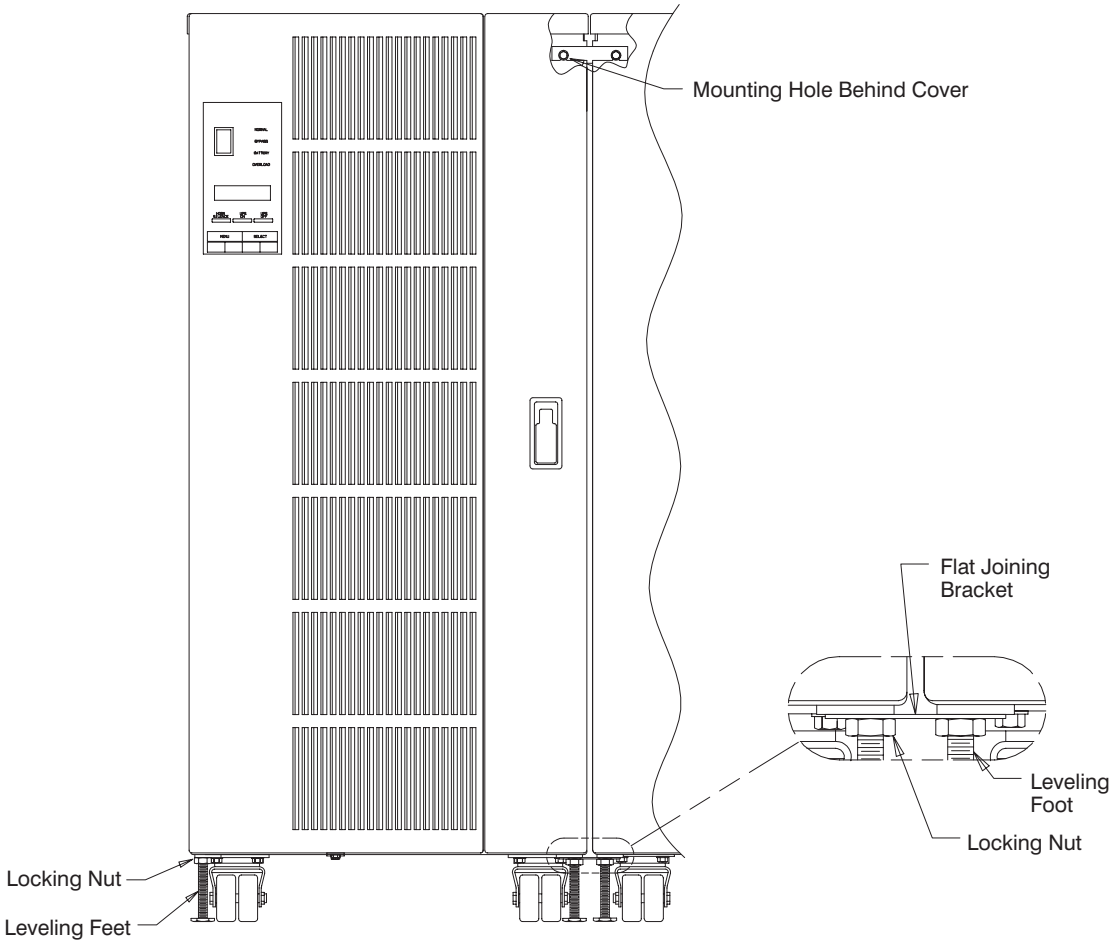


Figure 18. Cabinet Joining Detail (Front View)

7. Tighten the locking nuts against the bracket.
8. If you are installing an options cabinet, continue to “Installing the Options Cabinet” on page 52.
9. Repeat the procedure as necessary until all cabinets are in place (beginning with Step 8 on page 47).
10. Continue to “Wiring the Battery Cabinets” on page 59.

Installing the Options Cabinet

Warning: Only qualified service personnel (such as a licensed electrician) should perform the Options Cabinet installation. Risk of electrical shock.

For optimum system operation, be sure that your site conforms to the following specifications and requirements:

- The maximum elevation for normal operation is 5000 ft (1500 m). Derating is required for higher elevations.
- Equipment weights are provided for typical configurations (see page 32). Contact your local sales representative if additional information is needed.
- Additional battery cabinets may be added for extended battery time.
- The unit should be installed with these environmental specifications: operating temperature of 0˚ to 40˚C and humidity of 5% to 95% (noncondensing).

Important Safeguards

- Do not tilt the cabinet more than 12 degrees; the unit may tip over.
- Do not connect more than three battery cabinets to the UPS unit to avoid fire and electrical shock hazard.

Refer to your national and local electrical codes for acceptable external wiring practices. Material and labor for the external wiring are customer-supplied. An external protective device for the input source must be provided and sized for the currents indicated on the UPS nameplates.

NOTE: *The maximum permissible input fault-current is 65,000 amps. Upstream protection must be coordinated with the load current requirements under nominal as well as low-line and overload conditions. For I-T neutral power sources, upstream protection must simultaneously disconnect the three-phase conductors and the neutral. The recommended input stream service protection is 125 amps for 115/200-127/220 VAC inputs and 63 amps for 220/380-277/480 VAC inputs.*

The UPS must be grounded at the input terminal block to a single-point local or utility earth ground. The ground conductor should be sized according to your national and local electrical codes. In the United States, the output is a separately-derived source.

If you are using remote batteries, a DC breaker suitable for branch circuit protection is required. the DC breaker is customer-supplied and must be rated at 250V, 75A. The maximum fault current from a remote battery cannot be more than 6000 amps.

Caution: Risk of electrical shock. Battery circuit is not isolated from AC input. Hazardous voltage may exist between battery terminals and ground. Test before touching.

1. Make sure that the source voltage matches input voltage specified on rating label of this cabinet (see Figure 19).

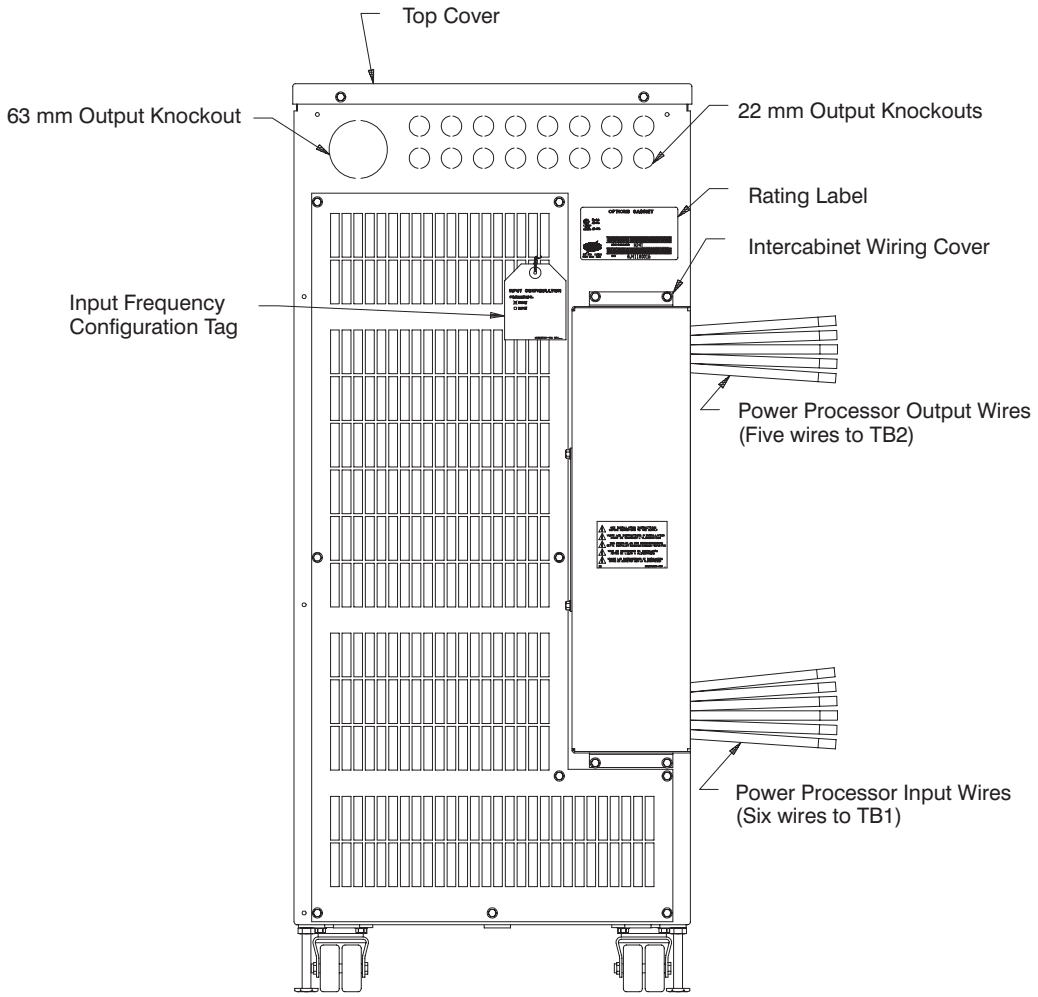


Figure 19. Options Cabinet Rear View

2. Remove the four #10 hex-head screws located on the top and bottom corners of the intercabinet wiring cover. Retain the screws.

3. Remove the intercabinet wiring cover and retain for later use.

4. Remove the eight #10 hex-head screw located on the corners and sides of the customer wiring cover on power processor cabinet (see Figure 8 on page 41).

5. Remove cover and retain screws. Refer to labels on inside of cover to torque specifications.

6. Pass the two sets of wires from options cabinet (Figure 19) through corresponding entry holes of power processor cabinet (input/output power entry) (Figure 8).

7. Line the rim of these entry holes with the grommet material provided in the options cabinet joining kit.

8. Connect all wires according to the “Cable Terminations to Power Processor” table located below.

Cable Terminations to Power Processor			
Wire Function		**Wire Number (from Options Cabinet)**	**Terminal Position**
Input to Power Processor	Phase A	51 or 54	TB1-1
	Phase B	52 or 55	TB1-2
	Phase C	53 or 56	TB1-3
	Neutral	57-1	TB1-4
	Neutral	57-2	TB1-5
	Ground	11	TB1-6
Output from Power Processor	Phase A	61	TB2-1
	Phase B	62	TB2-2
	Phase C	63	TB2-3
	Neutral	64	TB2-4
	Neutral	64	TB2-5

9. Reinstall the intercabinet wiring cover removed in Step 3.

Wiring to Options Cabinet Input

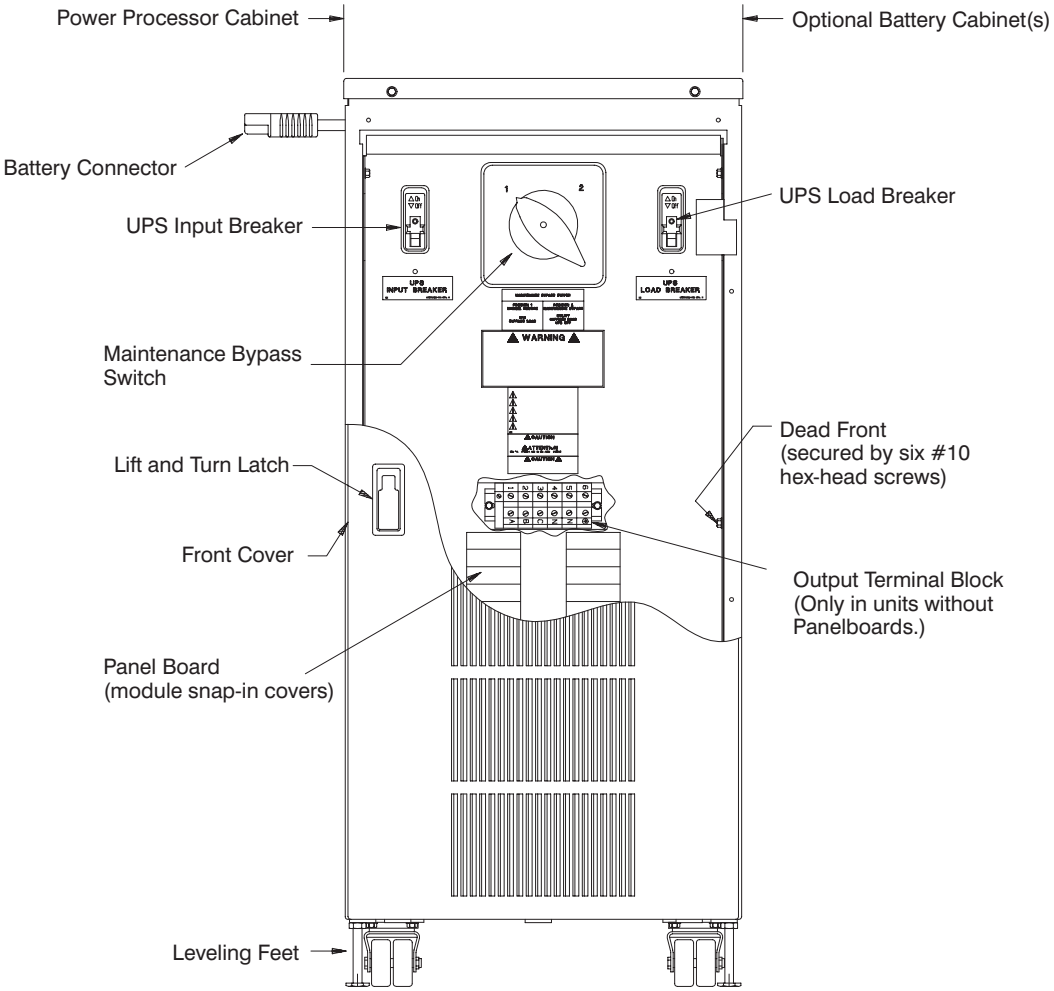


Figure 20. Options Cabinet (Front View)

1. Locate the input power terminal block access cover (see Figure 21).
2. Remove the four #10 hex-head screws located on the corners of the input power terminal block access cover. Remove the cover. Retain screws and cover for later use.

   NOTE: *Refer to label on the inside of the cover for torque specifications.*

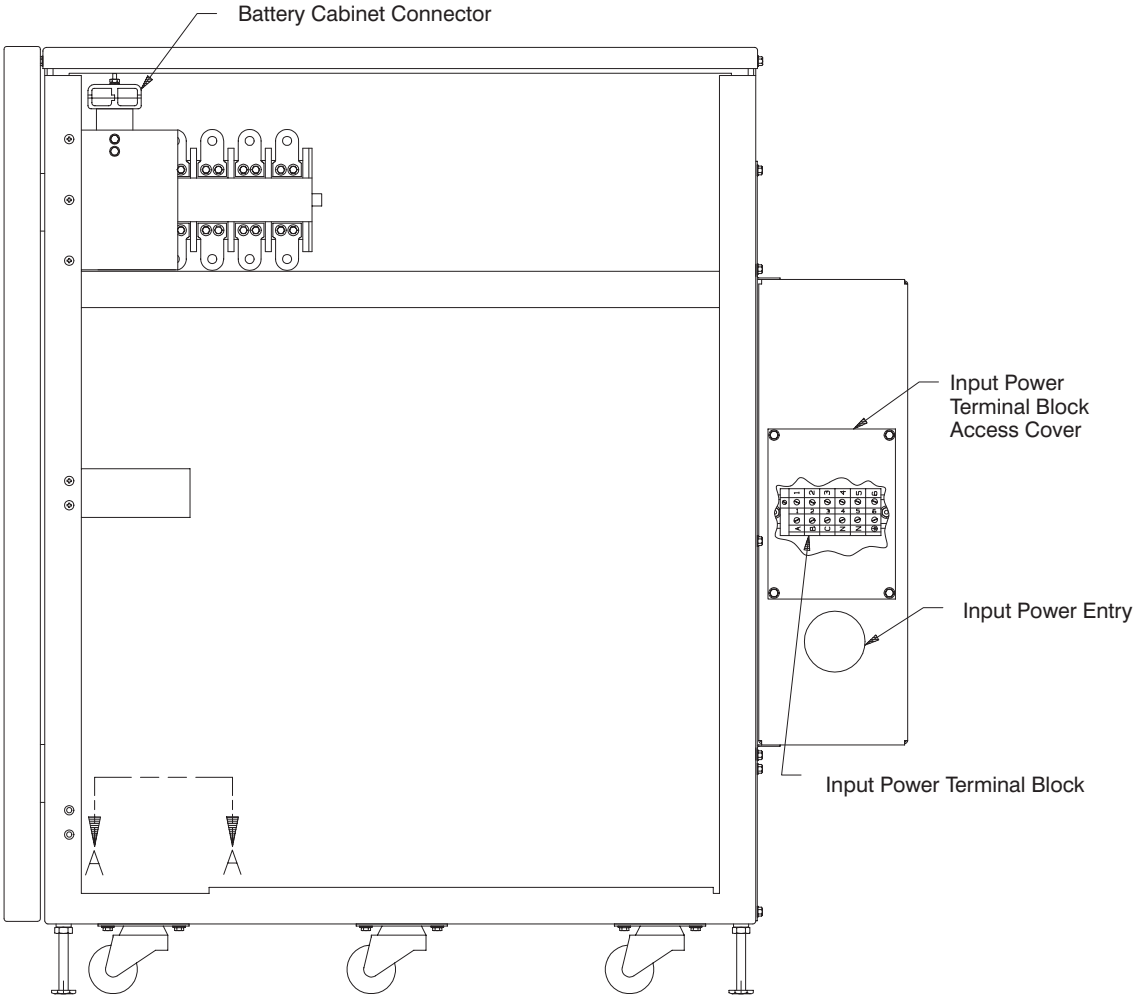


Figure 21. Options Cabinet Right Side View

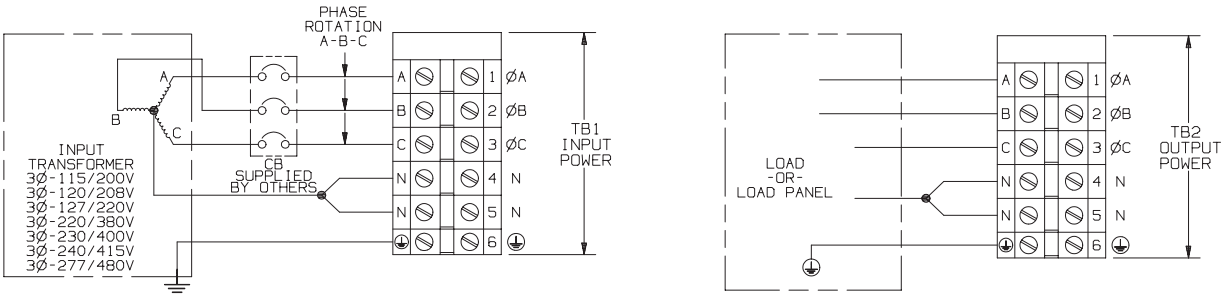
3. Run conduit to the input power entry.

4. Connect your voltage source to the input power terminal block TB1 of the options cabinet. Refer to the “Options Cabinet Customer Cable Terminations” table shown below.

Options Cabinet Customer Cable Terminations				
Wire Function		**Terminal Position**	**Terminal Wire Size Rating**	**Suggested Wire Size***
Input	Phase A	TB1-1	6 – 1/0 AWG (16 – 50 mm²)	For 120/208 or 127/220 VAC inputs: 1/0 AWG (50 mm²) For all other inputs: 4 AWG (25 mm²)
	Phase B	TB1-2		
	Phase C	TB1-3		
	Neutral**	TB1-4		
	Neutral**	TB1-5		
	Ground	TB1-6	6 – 2 AWG (16-35 mm²)	6 AWG (16 mm²)
Output (if no PDM options)	Phase A	TB2-1	6 – 1/0 AWG (16 – 50 mm²)	For 120/208 or 127/220 VAC inputs: 1/0 AWG (50 mm²) For all other inputs: 4 AWG (25 mm²)
	Phase B	TB2-2		
	Phase C	TB2-3		
	Neutral	TB2-4		
	Neutral	TB2-5		
	Ground	TB2-6	6 – 2 AWG (16 – 35 mm²)	6 AWG (16 mm²)

* Use 75°C copper wire. Suggested wire size is based on 3600-036K full load ratings applied to NEC Code Table 310-16. Both input and output neutral connections require a total of two wires at the suggested size (one wire per terminal position).

** Input neutral is required if single-phase loads are to be supplied, and if the options cabinet has input or output auto-transformers (380−480V three phase).



Typical Input Connections

Typical Output Connections

Figure 22. Typical Input and Output Connections

5. Reinstall the input power terminal block access cover removed in Step 2.

Wiring to the Options Cabinet Output

1. Remove the six #10 hex-head screws on the dead front cover (see Figure 20). Remove the panel. Retain the panel and screws.
2. Prepare the knockouts for bottom entry (Figure 23) or back entry (see Figure 19).

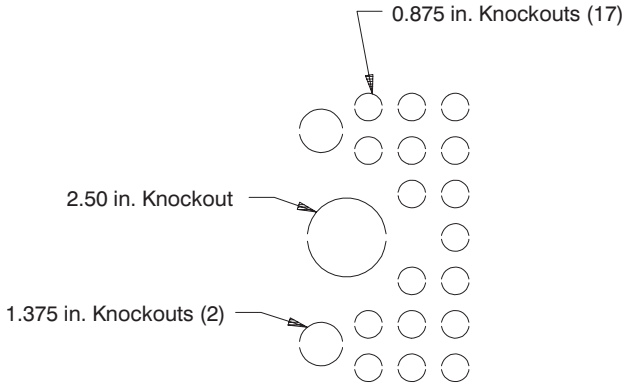


Figure 23. Bottom Entry Conduit Knockouts

3. If you do not have a PDM option, then connect your output wiring to the output terminal block TB2 according to the "Options Cabinet Customer Cable Terminations" table located on page 57.

> **Caution:** The panelboard is still live when UPS input breaker is off. Turn off UPS load breaker when servicing.

4. If you have the PDM option, then install the output breakers into panelboard (see Figure 24).

NOTE: *The panelboard is Square-D type NQOM and it can accept up to 30 single-pole Square-D type QO or type QOB breakers.*

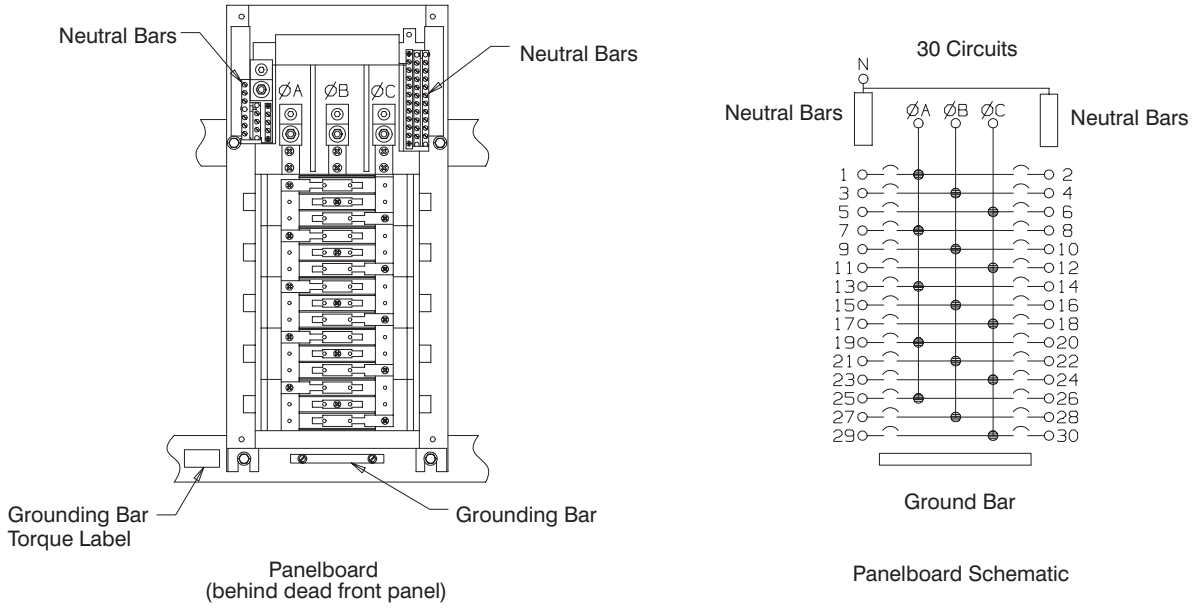


Figure 24. Panelboard and Panelboard Schematic

5. Install output wiring, referring to appropriate labels for wire size and tightening torques.

6. Remove one panelboard module snap-in cover (see Figure 15 on page 48) from the dead front panel for each breaker pole installed into the panelboard.

7. Reinstall the dead front panel removed in Step 1.

8. Continue to the following section, "Wiring the Battery Cabinets."

Wiring the Battery Cabinets

To connect the battery cabinets to the UPS, perform the following procedure:

1. Cut the tie on the battery connector.
2. Take the battery cabinet connector (P1) from each battery cabinet and mate it to the matching J1 connector in the next cabinet to the left. (see Figure 25).
3. If another battery cabinet is positioned to the right, plug its tied connector to the battery cabinet receptacle (J1).

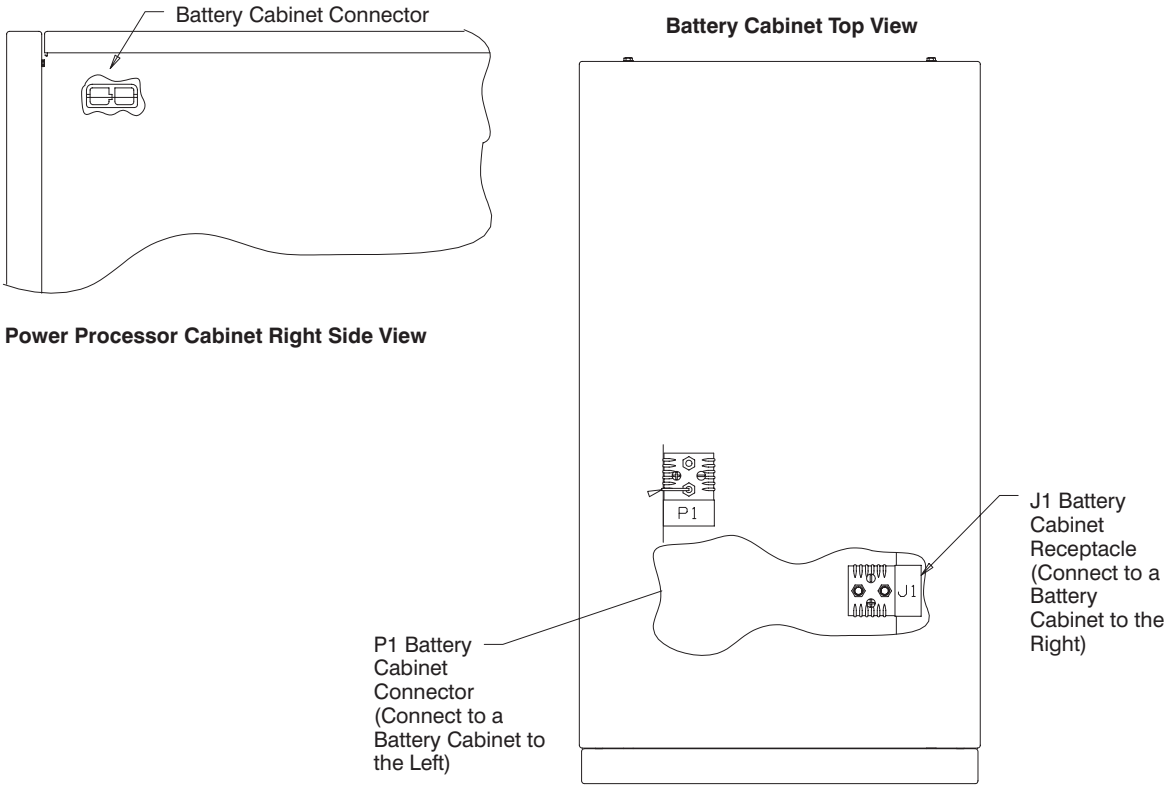


Figure 25. Battery Cabinet Connectors

Caution: Battery circuit is not isolated from AC input. Hazardous voltage may exist between battery terminals and ground. Test before touching.

Caution: All cabinets must be secured to prevent them from moving when installation is complete. Secure the cabinets either by lowering all leveling feet to take the weight off the casters, or by bolting the cabinets to the floor using the seismic installation procedure. Failure to do so violates safety rules and results in the unit losing its safety agency approvals.

Completing Installation

1. Make sure all front leveling feet are secured in place with the locking nuts secured against the cabinets.
2. Remount the side cover on the power processor cabinet.
3. Replace all top covers.
4. Replace all front covers.
5. Continue to “UPS Startup and Shutdown” on page 23 to start up your UPS.

Installing Remote Batteries

The following sections describe how to determine the battery capacity and install and configure the remote batteries.

Determining the Battery Capacity

When a battery cabinet is not supplied with the UPS, DC power can be supplied by remote batteries. It is recommended to use sealed maintenance-free, lead-acid type batteries. To determine the battery capacity you need for your UPS:

1. Determine the active load KW and load power fact PF of the critical load to be protected by the UPS. KW is calculated from the apparent power kVA and the load power PF as:

$$(KW) = (kVA) \times PF$$

2. Determine the power to be delivered by the battery KW_{Batt}. The efficiency of the UPS is taken into consideration and can be calculated using the following expression:

$$(KW_{Batt}) = \frac{(KW)}{0.85 - 0.05 \times (1 - PF)}$$

3. Nominal battery voltage is 240 Vdc (120 cells @ 2.0 Vdc). Float voltage should not exceed 270 Vdc.
4. Determine the desired backup time and the operating temperature.
5. The low-battery shutdown voltage is customer-selectable. It can be set between 1.67 Vdc/cell and 1.85 Vdc/cell. Select a value suitable for your application to size your battery and make sure you set the value when configuring the UPS.
6. Follow the battery manufacturer’s application notes and charts to calculate the battery capacity necessary for your application.
7. The UPS has a cyclic battery charger (turn on = 265 Vdc, turn off = 285 Vdc) that delivers a maximum current of 5 amps. The internal charger must be disabled when an external charger is used. For battery sizes above 75 AH, an external charger is recommended.

Remote Battery Installation

The following instructions assume you have already installed the UPS according to the instructions beginning on page 38.

Caution: Do not add remote batteries if a battery cabinet is already connected to the UPS.

1. Refer to the battery manufacturer's operator's manual for battery installation and maintenance instructions.
2. Remove the knock-out for the conduit as shown in Figure 26.

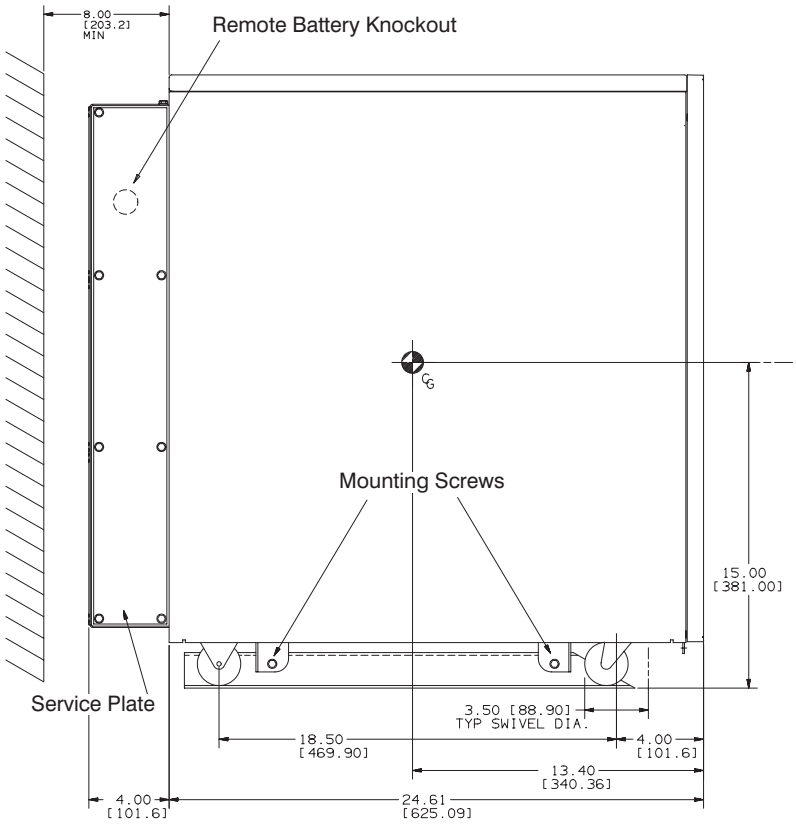


Figure 26. Remote Battery Access

3. Follow the wiring instructions in "Electrical Installation" on page 41.
4. Configure the Bypass and Input Configuration switches as described on page 44.
5. Continue to the following section, "Remote Battery Configuration," to change the UPS setup.

Remote Battery Configuration

After the remote battery has been installed, change the UPS setup. See Chapter 4, “UPS Startup and Shutdown,” on page 23 before applying power to the unit for the first time. Perform the following steps without removing the AC input power:

1. Verify the system type.
2. Press the Menu button. **MAIN MENU 1. UPS Status** appears.
3. Press the down arrow button until **MAIN MENU 7. System Setup** appears. Press the Select button. The prompt **Password AAAAAA** appears.

   NOTE: *The default password is MEMORY. It is recommended to change the default password to ensure security (see page 16). Contact your field service representative if you have misplaced your password.*

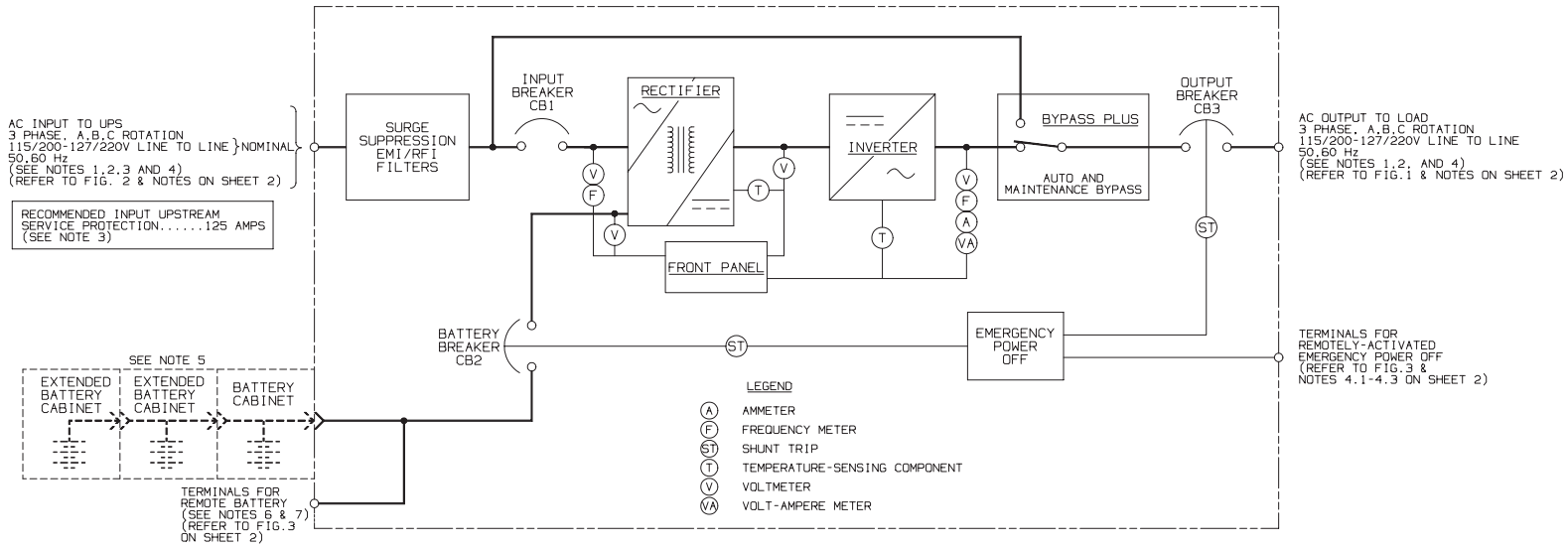
4. Enter the password using the up and down arrow buttons to scroll through the letters. Use the right and left arrow buttons to move to another character position.
5. After you have entered the password, press the Select button. The display now shows **SYSTEM SETUP 1. Select Type**.
6. Press the down arrow button until **13. Battery Cfg** appears. Press the Select button.
7. Using the up and down arrow buttons, scroll to **Custom Battery**. Press the Select button.
8. A battery charger disable/enable menu appears that allows you to enable or disable the UPS built-in battery charger. Select either **Enable** or **Disable** by using the left and right arrow buttons. Press the Select button. An asterisk appears beside the newly selected option.

   Press the down arrow button. A **Custom DCUV** menu appears that allows you to select the low-battery shutdown level.

   Use the left and right arrow buttons to scroll through the different options. Press Select to choose the desired **DCUV** level. An asterisk appears to the left of the newly selected option.

   NOTE: *If the Custom DCUV selection does not appear after selecting Custom Battery, verify that the UPS is off or on bypass.*

9. Press the Menu button four times to exit System Setup.



CAUTION

RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVERS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

NOTES:

1) REFER TO NATIONAL AND LOCAL ELECTRICAL CODES FOR ACCEPTABLE EXTERNAL WIRING PRACTICES.
2) MATERIAL AND LABOR FOR EXTERNAL WIRING ARE TO BE PROVIDED BY OTHERS.
3) AN EXTERNAL PROTECTIVE DEVICE FOR THE INPUT SOURCE MUST BE PROVIDED AND SIZED FOR THE CURRENTS INDICATED ON THE NAMEPLATE, PER NATIONAL AND LOCAL ELECTRICAL CODES. THE MAXIMUM PERMISSIBLE INPUT FAULT CURRENT IS 65,000 AMPERES. (NOTE: UPSTREAM PROTECTION MUST BE COORDINATED WITH LOAD CURRENT REQUIREMENTS UNDER NOMINAL AS WELL AS LOW LINE AND OVERLOAD CONDITIONS.)
4) THE UNIT SHALL BE GROUNDED AT THE INPUT TERMINAL BLOCK TO A SINGLE POINT LOCAL OR UTILITY EARTH GROUND. THE GROUND CONDUCTOR SHALL BE SIZED PER NATIONAL AND LOCAL ELECTRICAL CODE REQUIREMENTS. ON THE OUTPUT, FOLLOW APPLICABLE ELECTRICAL GROUNDING GUIDELINES. IN THE UNITED STATES, THE OUTPUT IS A "SEPARATELY DERIVED SOURCE".
5) WARNING: TO AVOID FIRE AND ELECTRIC SHOCK HAZARD, DO NOT CONNECT MORE THAN THREE BATTERY CABINETS TO THE POWER PROCESSOR CABINET.
6) REMOTE BATTERIES REQUIRE A DC BREAKER SUITABLE FOR BRANCH CIRCUIT PROTECTION (TO BE PROVIDED BY OTHERS).
7) THE MAXIMUM AVAILABLE FAULT CURRENT PERMITTED FROM A REMOTE BATTERY SUPPLY IS 6000 AMPERES.
8) INPUT NEUTRAL IS REQUIRED IF SINGLE-PHASE LOADS ARE TO BE SUPPLIED, AND IF OPTIONS CABINET HAS INPUT OR OUTPUT AUTO-TRANSFORMERS (380-480V 3Ø).

ELECTRICAL SPECIFICATIONS

NOMINAL VOLTAGE	MODEL 24				MODEL 36			
	MAXIMUM kVA	NOMINAL kW	MAXIMUM RATED CURRENT PER PHASE		MAXIMUM kVA	NOMINAL kW	MAXIMUM RATED CURRENT PER PHASE	
			INPUT *,#	OUTPUT *,J			INPUT *,#	OUTPUT *,J
200/115VAC	23.2	16.0	58 A	67 A	34.5	24.0	87 A	100 A
208/120VAC	24.0	16.0	56 A	67 A	36.0	24.0	84 A	100 A
220/127VAC	24.0	16.0	53 A	62 A	36.0	24.0	79 A	94 A

* INPUT AND OUTPUT CURRENTS ARE APPROXIMATELY THE SAME WHEN LOAD IS POWERED THROUGH THE BYPASS.
# ADD UP TO 10.0 AMPERES PER PHASE FOR BATTERY CHARGER CURRENT.
J NOMINAL CURRENT AT 0.67 POWER FACTOR.

Description: Oneline Diagram, 3600-024K & 3600-036K Power Processor Cabinet
Drawing No. 110718267 Revision C
Sheet 1 of 2

INSTALLATION INSTRUCTIONS:

* THE OUTPUT VOLTAGE AND FREQUENCY ARE SET USING THE FRONT PANEL. CONSULT THE OPERATOR'S MANUAL FOR DETAILS.

ONLY QUALIFIED SERVICE PERSONNEL SHOULD ATTEMPT TO CONFIGURE THIS EQUIPMENT.

1.0 GROUNDING AND NEUTRAL BONDING

1.1 DETERMINE YOUR SYSTEM'S GROUNDING REQUIREMENTS.

1.2 INSTALL, AS PART OF THE BRANCH CIRCUIT THAT SUPPLIES THIS UNIT, AN INSULATED GROUNDING CONDUCTOR THAT IS IDENTICAL IN INSULATION THICKNESS AND MATERIAL TO THE GROUNDED AND UNGROUNDED BRANCH-CIRCUIT SUPPLY CONDUCTORS. ITS COLOR SHOULD BE GREEN, WITH OR WITHOUT ONE OR MORE YELLOW STRIPES.

1.3 THE ABOVE-MENTIONED GROUNDING CONDUCTOR SHOULD BE GROUNDED TO EARTH AT THE SERVICE EQUIPMENT OR, IF SUPPLIED BY A SEPARATELY-DERIVED SYSTEM, AT THE SUPPLY TRANSFORMER.

1.4 ALL ATTACHMENT-PLUG RECEPTACLES IN THE VICINITY OF THIS UNIT OR SYSTEM ARE TO BE OF A GROUNDING TYPE, AND THE GROUNDING CONDUCTORS SERVING THESE RECEPTACLES ARE TO BE CONNECTED TO EARTH GROUND AT THE SERVICE EQUIPMENT.

1.5 IF OUTPUT NEUTRAL IS NOT TO BE GROUNDED, REMOVE THE BONDING WIRE (GREEN WITH YELLOW STRIPE) THAT RUNS FROM TB3-5 TO FRAME GROUND (IT IS RECOMMENDED THAT THIS BONDING WIRE BE REMOVED FOR A 3-WIRE DELTA OUTPUT). SEE FIGURE 3.

2.0 BYPASS CONFIGURATION

2.1 DETERMINE THE INPUT AND OUTPUT VOLTAGE AND FREQUENCY.

2.2 IDENTIFY THE BYPASS CONFIGURATION SWITCH S2, LOCATED BEHIND THE FRONT DOOR (SEE FIGURE 4).

2.3 IF THE INPUT AND OUTPUT VOLTAGE AND FREQUENCY ARE IDENTICAL, AND BYPASS IS DESIRED, SET THE BYPASS CONFIGURATION SWITCH S2 TO THE "ENABLE" POSITION.

2.4 IF THE INPUT AND OUTPUT VOLTAGE AND FREQUENCY ARE NOT IDENTICAL, OR IF BYPASS IS NOT DESIRED, OR IF THE INPUT FEED IS DELTA (3-WIRE) CONNECTED AND THE LOAD IS WYE (4-WIRE) CONNECTED, SET THE BYPASS CONFIGURATION SWITCH S2 TO THE "DISABLE" POSITION.

3.0 INPUT CONFIGURATION

3.1 MAKE SURE THAT INPUT CONFIGURATION SWITCH, LOCATED IN THE WIRING COMPARTMENT AT THE BACK OF THE UNIT, IS SET TO POSITION WYE (4-WIRE) INPUT, OR TO DELTA (3-WIRE) INPUT, AS YOUR INPUT DICTATES (SEE FIGURE 5 AND REFER TO THE LEFT SIDE VIEW OF DRAWING 110718268). THE UNIT IS SHIPPED WITH THE SWITCH SET FOR WYE INPUT.

4.0 REMOTE EMERGENGY POWER OFF

4.1 A REMOTE EMERGENCY POWER OFF (REPO) SWITCH IS A WALL-MOUNTED, NORMALLY-OPEN, MOMENTARY-CONTACT PUSH-BUTTON SWITCH SUPPLIED BY OTHERS.

4.2 MINIMUM RATINGS FOR A REPO SWITCH ARE 120 V AND 125 mA.

4.3 REPO WIRES ARE HIGH-VOLTAGE. REFER TO LOCAL ELECTRICAL CODES FOR PROPER INSTALLATION. SEE FIGURE 3.

4.4 POWER FOR THE REPO SWITCH IS SUPPLIED BY THE POWER PROCESSOR.

INPUT	OUTPUT
3Ø-200/115V	3Ø-200/115V
3Ø-208/120V	3Ø-208/120V
3Ø-220/127V	3Ø-220/127V

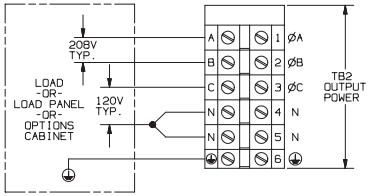


FIGURE 1

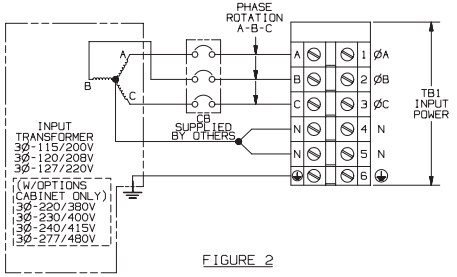


FIGURE 2

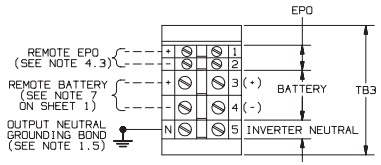


FIGURE 3

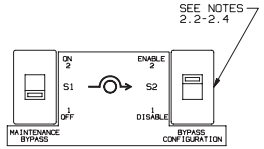


FIGURE 4

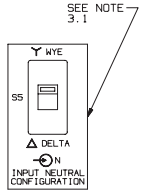


FIGURE 5

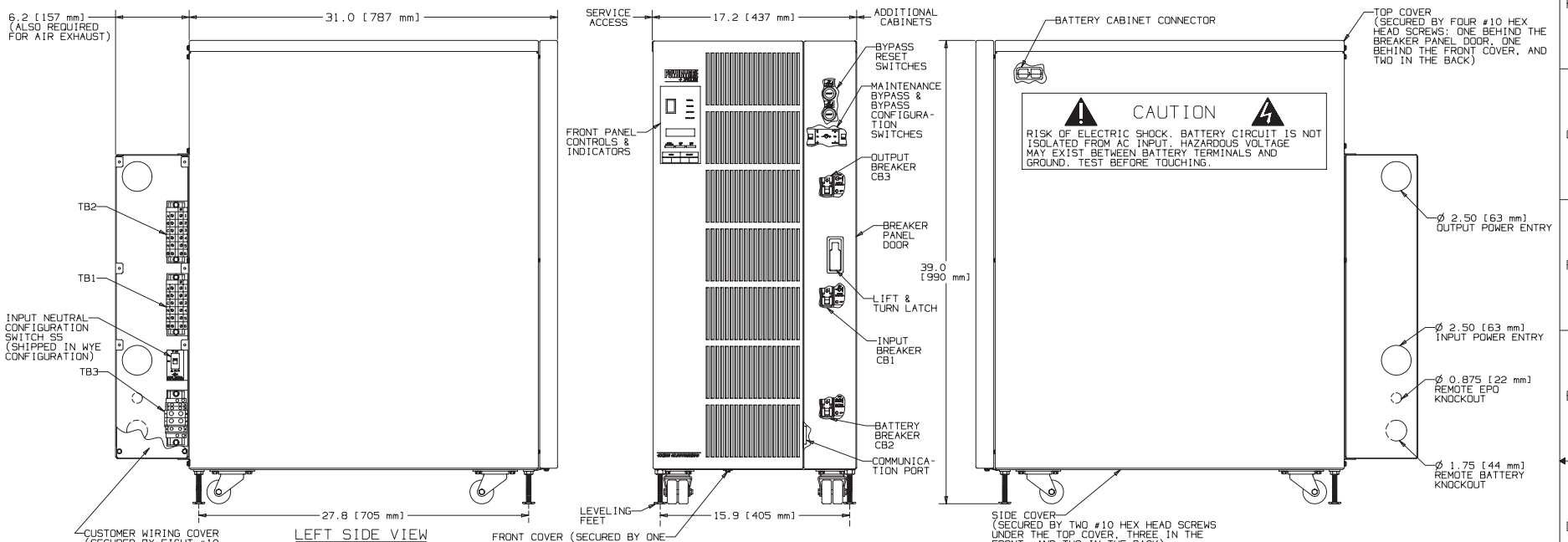
LEGEND

REPO - REMOTE EMERGENCY POWER OFF

CB - CIRCUIT BREAKER

N - NEUTRAL

Description: Oneline Diagram, 3600-024K & 3600-036K Power Processor Cabinet
Drawing No. 110718267 Revision C
Sheet 2 of 2



LEFT SIDE VIEW

THIS SIDE SHOULD HAVE ENOUGH ROOM BESIDE IT TO SERVICE THE EQUIPMENT (THREE FEET MINIMUM REQUIRED, REFER TO APPLICABLE OSHA REQUIREMENTS).

FRONT VIEW

RIGHT SIDE VIEW

THIS SIDE IS DESIGNED FOR THE ATTACHMENT OF ADDITIONAL CABINETS TO THE POWER PROCESSOR CABINET.

CUSTOMER CABLE TERMINATIONS

WIRE FUNCTION		TERMINAL POSITION	TERMINAL WIRE SIZE RATING	* SUGGESTED WIRE SIZE
INPUT	ØA	TB1-1	6-1/0 AWG (16-50 mm²)	1/0 AWG (50 mm²)
	ØB	TB1-2		
	ØC	TB1-3		
	NEUTRAL**	TB1-4		
	NEUTRAL	TB1-5		
	GROUND	TB1-6	6-2 AWG (16-35 mm²)	6 AWG (16 mm²)
OUTPUT	ØA	TB2-1	6-1/0 AWG (16-50 mm²)	1/0 AWG (50 mm²)
	ØB	TB2-2		
	ØC	TB2-3		
	NEUTRAL	TB2-4		
	NEUTRAL	TB2-5		
	GROUND	TB2-6	6-2 AWG (16-35 mm²)	6 AWG (16 mm²)
REMOTE EPO	(+)	TB3-1	18-8 AWG (0-6 mm²)	10 AWG (6 mm²)
	(-)	TB3-2		
REMOTE BATTERY	(+)	TB3-3	6-1/0 AWG (16-50 mm²)	1/0 AWG (50 mm²)
	(-)	TB3-4		
NEUTRAL BONDING		TB3-5	8-4 AWG (6-16 mm²)	PROVIDED

* USE 75°C COPPER WIRE. SUGGESTED WIRE SIZE IS BASED ON MODEL 36 FULL LOAD RATINGS APPLIED TO NEC CODE TABLE 310-16. BOTH INPUT AND OUTPUT NEUTRAL CONNECTIONS REQUIRE A TOTAL OF TWO WIRES AT THE SUGGESTED SIZE (ONE WIRE PER TERMINAL POSITION).

** INPUT NEUTRAL IS REQUIRED IF SINGLE-PHASE LOADS ARE TO BE SUPPLIED, AND IF OPTIONS CABINET HAS INPUT OR OUTPUT AUTO-TRANSFORMERS (380-480V 3Ø).

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVERS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION

RISK OF ELECTRIC SHOCK. REMOTE BATTERY TERMINALS (TB3-3,4) HAVE VOLTAGE WHEN A BATTERY CABINET IS CONNECTED TO THE POWER PROCESSOR CABINET.

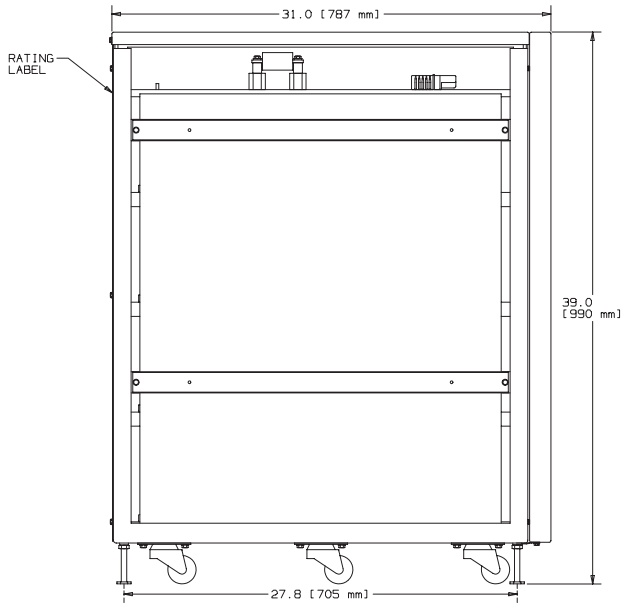
POWER PROCESSOR INFORMATION CHART

CABINET WEIGHT	400 POUNDS [182 KILOGRAMS]
POINT LOADING	100 POUNDS [45.5 KILOGRAMS]
HEAT DISSIPATION [240V INPUT, FULL LOAD OUTPUT AT 0.67 pF]	MODEL 36: 15,602 BTU/HR [3,932 KG-CAL/HR]
	MODEL 24: 10,402 BTU/HR [2,621 KG-CAL/HR]
SHIPPING CONTAINER DIMENSIONS	43.1 [1,095 mm] HEIGHT x 22.0 [559 mm] WIDTH x 41.0 [1,041 mm] DEPTH
SHIPPING CONTAINER WEIGHT	40 POUNDS [18 KILOGRAMS]

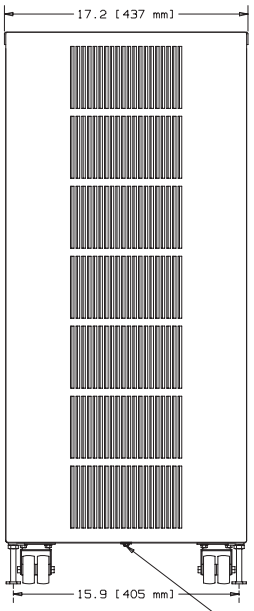
NOTES:

1) READ ALL WARNINGS BEFORE PROCEEDING.
2) DO NOT TILT THE CABINET MORE THAN 12 DEGREES (UNIT MAY TIP OVER).
3) MAXIMUM ELEVATION FOR NORMAL OPERATION: 5000 FEET (1500 METERS) DERATING IS REQUIRED FOR HIGHER ELEVATIONS.
4) VENTILATION: FAN COOLED - INTAKE IN FRONT, EXHAUST IN REAR.
5) REFER TO DRAWING 110718267 BEFORE CONNECTING INPUT AND OUTPUT WIRING. INSTALLATION MUST BE MADE BY QUALIFIED SERVICE PERSONNEL.
6) REFER TO DRAWING 110718270 FOR CABINET JOINING AND SEISMIC MOUNTING INSTRUCTIONS.
7) REFER TO DRAWING 110718271 FOR OPTIONS CABINET INSTALLATION INSTRUCTIONS.
8) REFER TO DRAWING 110718269 FOR BATTERY CABINET INSTALLATION INSTRUCTIONS.
9) FOR OPTIONS, CONTACT THE FACTORY OR YOUR DEALER.

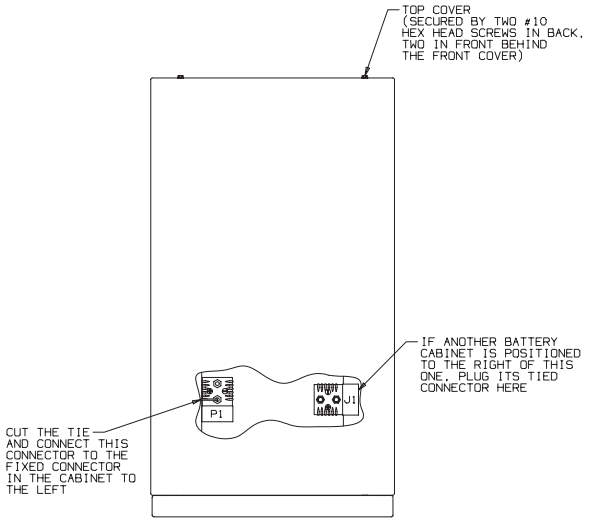
Description: Power Processor Outline Drawing, 3600-024K & 3600-036K
Drawing No. 110718268 Revision D
Sheet 1 of 1



LEFT SIDE VIEW



FRONT VIEW



TOP VIEW

DANGER

RISK OF ELECTRIC SHOCK. LETHAL VOLTAGE PRESENT. DO NOT TOUCH UNINSULATED BATTERY TERMINALS.

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVERS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION

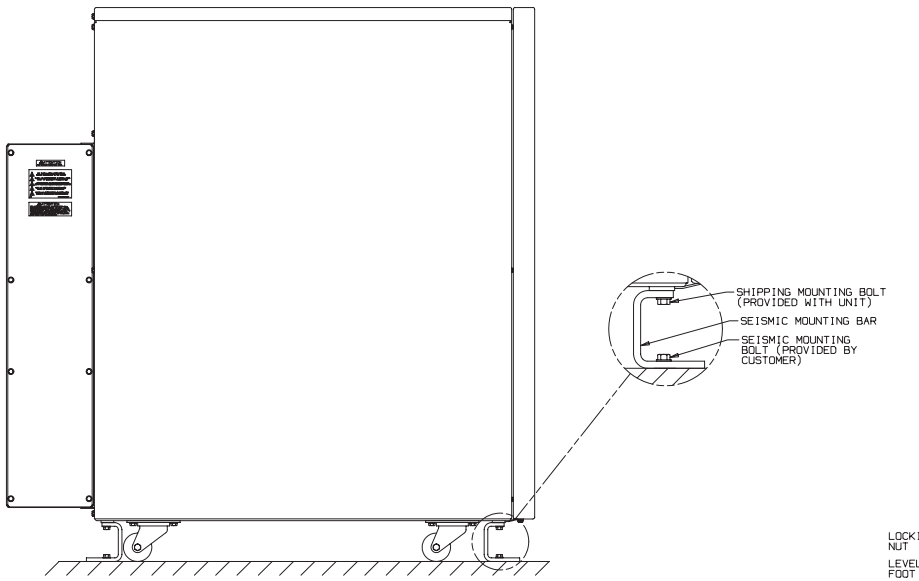
RISK OF ELECTRIC SHOCK. BATTERY CIRCUIT IS NOT ISOLATED FROM AC INPUT. HAZARDOUS VOLTAGE MAY EXIST BETWEEN BATTERY TERMINALS AND GROUND. TEST BEFORE TOUCHING.

BATTERY CABINET INFORMATION CHART	
CABINET WEIGHT	900 POUNDS [410 KILOGRAMS]
POINT LOADING	225 POUNDS [103 KILOGRAMS]
SHIPPING CONTAINER DIMENSIONS	43.1 [1,095 mm] HEIGHT x 22.0 [559 mm] WIDTH x 41.0 [1,041 mm] DEPTH
SHIPPING CONTAINER WEIGHT	40 POUNDS [18 KILOGRAMS]

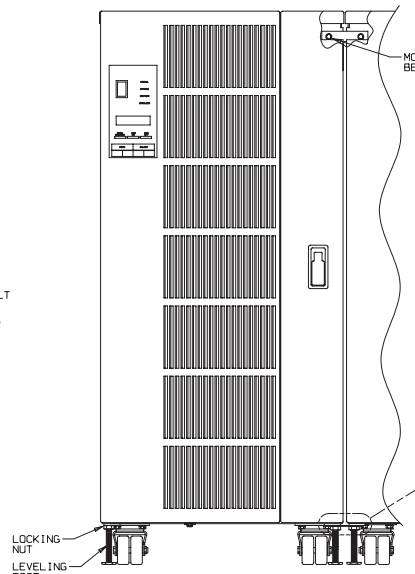
NOTES:

1) READ ALL WARNINGS BEFORE PROCEEDING.
2) DO NOT TILT THE CABINET MORE THAN 12 DEGREES (UNIT MAY TIP OVER).
3) MAXIMUM ELEVATION FOR NORMAL OPERATION: 5000 FEET (1500 METERS) DERATING IS REQUIRED FOR HIGHER ELEVATIONS.
4) VENTILATION: NATURAL CONVECTION.
5) REFER TO DRAWING 110718270 FOR CABINET JOINING AND SEISMIC MOUNTING INSTRUCTIONS. INSTALLATION MUST BE MADE BY QUALIFIED SERVICE PERSONNEL.
6) WARNING: TO AVOID FIRE AND ELECTRICAL SHOCK, DO NOT CONNECT MORE THAN THREE BATTERY CABINETS TO THE POWER PROCESSOR CABINET.

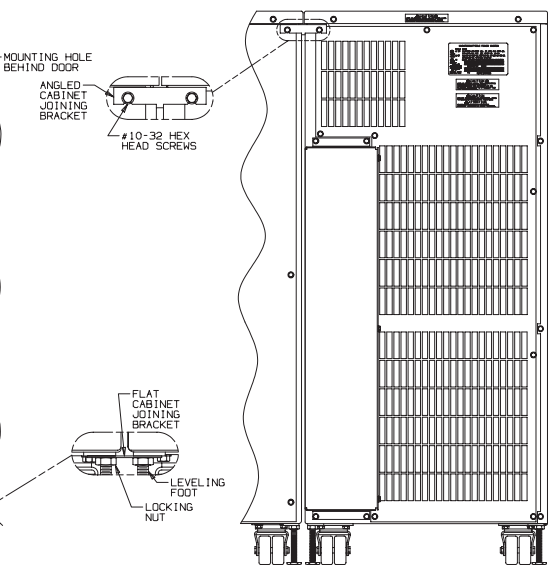
Description: Battery Cabinet Outline Drawing, 3600-024K & 3600-036K
Drawing No. 110718269 Revision A
Sheet 1 of 1



LEFT SIDE VIEW
SEISMIC MOUNTING DETAIL
(LEVELING FEET NOT SHOWN)



FRONT VIEW
CABINET JOINING DETAIL



REAR VIEW
CABINET JOINING DETAIL

PHYSICAL INSTALLATION INSTRUCTIONS

ATTENTION

THIS EQUIPMENT MUST BE SECURED TO PREVENT UNWANTED ROLLING AFTER INSTALLATION BY EITHER ADJUSTING ALL LEVELING FEET TO TAKE THE WEIGHT OFF THE CASTERS, OR BY BOLTING THE UNITS TO THE FLOOR WITH THE SEISMIC MOUNTING BARS SHIPPED WITH EACH CABINET. FAILURE TO DO SO WILL VIOLATE SAFETY RULES AND WILL RESULT IN THE LOSS OF SAFETY AGENCY APPROVALS FOR THIS UNIT.

YOU MAY SKIP STEPS UNDER ANY HEADING THAT DOES NOT APPLY TO YOUR PARTICULAR INSTALLATION.

PREPARATION FOR SEISMIC MOUNTING

* STEPS 1 AND 2 ARE FOR SEISMIC MOUNTING ONLY. IF YOU ARE NOT INSTALLING SEISMIC MOUNTING, GO DIRECTLY TO STEP 3.

1) PREPARE ALL FLOOR SEISMIC MOUNTING HOLES PER THE DRILL PATTERN DEPICTED IN THE OPERATOR'S MANUAL. FLOOR MOUNTING BOLTS ARE TO BE PROVIDED BY THE CUSTOMER. THE SEISMIC MOUNTING BARS HAVE 0.438" DIAMETER MOUNTING HOLES.

2) LOCATE THE SEISMIC MOUNTING BARS THAT SECURED EACH CABINET TO ITS PALLET. ATTACH ONE MOUNTING BAR TO THE FLOOR FOR THE REAR OF EACH CABINET TO BE INSTALLED.

SECURING THE POWER PROCESSOR CABINET

3) ROLL THE POWER PROCESSOR CABINET INTO PLACE. SEE DRAWING 110718268 FOR SPACE REQUIREMENTS.

4) (THIS STEP FOR SEISMIC MOUNTING ONLY) ATTACH A MOUNTING BAR TO THE FLOOR AT THE FRONT OF THE CABINET. THEN SECURE THE CABINET TO BOTH THE FRONT AND REAR MOUNTING BARS WITH THE HARDWARE PROVIDED WITH THE UNIT. GO DIRECTLY TO STEP 6.

5) LOWER ALL LEVELING FEET SUCH THAT THE CABINET WILL NO LONGER ROLL ON ITS CASTERS. FOR THE REAR LEVELING FEET ONLY, TIGHTEN THE LOCKING NUTS AGAINST THE CABINET.

PREPARING THE POWER PROCESSOR CABINET ELECTRICALLY

6) NOW READ "ELECTRICAL INSTALLATION" AND "FINAL CONFIGURATION" IN THE OPERATOR'S MANUAL, ONELINE DRAWING 110718267, AND POWER PROCESSOR OUTLINE DRAWING 110718268 FOR WIRING AND CONFIGURATION INFORMATION. READ ALL WARNINGS BEFORE PROCEEDING.

A) CONFIGURE THE OUTPUT CIRCUIT GROUND BY READING "ELECTRICAL INSTALLATION" IN THE OPERATOR'S MANUAL AND STEP 1.5 OF ONELINE DRAWING 110718267.

B) CONFIGURE THE BYPASS BY REFERING TO "BYPASS CONFIGURATION" IN THE OPERATOR'S MANUAL AND STEPS 2.1-2.4 OF ONELINE DRAWING 110718267.

C) CONFIGURE THE INPUT BY REFERING TO "INPUT CONFIGURATION" IN OPERATOR'S MANUAL AND STEP 3.1 OF ONELINE DRAWING 110718267.

D) VERIFY THAT THE MAINTENANCE BYPASS SWITCH IS SET IN THE OFF ("I") POSITION BY REFERING TO "MAINTENANCE BYPASS" IN THE OPERATOR'S MANUAL AND FIGURE 4 OF ONELINE DRAWING 110718267.

E) IF YOU HAVE A REMOTE EMERGENCY POWER OFF, CONNECT IT BY REFERING TO SECTION 2.5.1 IN THE OPERATOR'S MANUAL, STEPS 4.1-4.3 OF ONELINE DRAWING 110718267, AND THE "CUSTOMER TERMINATION TABLE" OF OUTLINE DRAWING 110718268.

F) IF YOU HAVE REMOTE BATTERIES, CONNECT THEM BY REFERING TO NOTES 6-7 OF ONELINE DRAWING 110718267 AND THE "CUSTOMER TERMINATION TABLE" OF OUTLINE DRAWING 110718268.

G) (THIS STEP ONLY FOR WHEN AN OPTIONS CABINET WILL NOT BE INSTALLED) CONNECT INPUT AND OUTPUT WIRING TO THE POWER PROCESSOR, REFERING TO ONELINE DRAWING 110718267 AND OUTLINE DRAWING 110718268 FOR CONNECTION REQUIREMENTS.

PREPARING THE POWER PROCESSOR CABINET FOR JOINING

7) REMOVE THE FRONT COVER OF THE POWER PROCESSOR CABINET BY REMOVING THE SCREW IDENTIFIED IN DRAWING 110718268, OPENING THE BREAKER PANEL DOOR, THEN LIFTING THE FRONT COVER UPWARD BEFORE PULLING FORWARD. SAVE COVER AND SCREW FOR LATER USE.

8) REMOVE THE TOP COVER OF THE POWER PROCESSOR CABINET BY REMOVING THE FOUR SCREWS IDENTIFIED IN DRAWING 110718268. SAVE COVER AND SCREWS FOR LATER USE.

9) REMOVE THE RIGHT SIDE COVER OF THE POWER PROCESSOR CABINET BY REMOVING THE SEVEN SCREWS IDENTIFIED IN DRAWING 110718268. SAVE COVER AND SCREWS FOR LATER USE.

PREPARING THE CABINET TO BE JOINED

10) ROLL THE NEXT CABINET INTO PLACE (OPTIONS CABINET FIRST, IF THERE IS ONE).

11) REMOVE THE FRONT AND TOP COVERS OF THE CABINET TO BE JOINED. THE APPLICABLE OUTLINE DRAWING (110718271 FOR THE OPTIONS CABINET, 110718269 FOR THE BATTERY CABINET) LOCATES HARDWARE AND IDENTIFIES THE REMOVAL PROCEDURE. SAVE BOTH COVERS AND HARDWARE FOR LATER USE.

JOINING TWO CABINETS

12) LOCATE THE JOINING KIT SECURED TO THE BACK OF THE CABINET TO BE JOINED.

13) REMOVE THE SCREWS SECURING THE ADJOINING TOP CORNERS OF THE REAR COVERS OF BOTH CABINETS AS SHOWN IN THE REAR VIEW ABOVE AND INSTALL ONE OF THE ANGLED JOINING BRACKETS AT THAT LOCATION WITH THE SCREWS JUST REMOVED.

14) JOIN THE TOP FRONT CORNERS OF THE CABINETS WITH THE OTHER ANGLED JOINING BRACKET AND THE PROVIDED HARDWARE AS SHOWN IN THE FRONT VIEW ABOVE.

SECURING THE JOINED CABINET

15) (THIS STEP FOR SEISMIC MOUNTING ONLY) ATTACH A MOUNTING BAR TO THE FLOOR AT THE FRONT OF THE CABINET. THEN SECURE THE CABINET TO BOTH THE FRONT AND REAR MOUNTING BARS WITH THE HARDWARE PROVIDED WITH THE UNIT. GO DIRECTLY TO STEP 17.

16) LOWER ALL LEVELING FEET SUCH THAT THE CABINET WILL NO LONGER ROLL ON ITS CASTERS. FOR THE REAR LEVELING FEET ONLY, TIGHTEN THE LOCKING NUTS AGAINST THE CABINET.

17) SECURE THE FRONT ADJOINING LEVELING FEET OF THE CABINETS TOGETHER WITH THE FLAT JOINING BRACKET AS SHOWN ABOVE. TIGHTEN THE LEVELING FEET LOCKING NUTS AGAINST THE BRACKET.

18) (THIS STEP FOR THE OPTIONS CABINET ONLY) FOLLOW THE INSTRUCTIONS ON SHEET TWO OF DRAWING 110718271 BEFORE PROCEEDING TO STEP 19.

JOINING ADDITIONAL CABINETS

19) REPEAT STEPS 10-17 AS NECESSARY UNTIL ALL CABINETS ARE IN PLACE.

WIRING BATTERY CABINETS TO THE SYSTEM

20) COMPLETE THE SYSTEM WIRING BY TAKING CONNECTOR P1 FROM EACH BATTERY CABINET (IDENTIFIED IN THE TOP VIEW OF OUTLINE DRAWING 110718269) AND MATING IT TO THE MATCHING J1 CONNECTOR IN THE NEXT CABINET TO THE LEFT.

READYING THE SYSTEM FOR POWER-UP

21) MAKE SURE ALL FRONT LEVELING FEET ARE SECURED IN PLACE WITH THE LOCKING NUTS AGAINST THE CABINET.

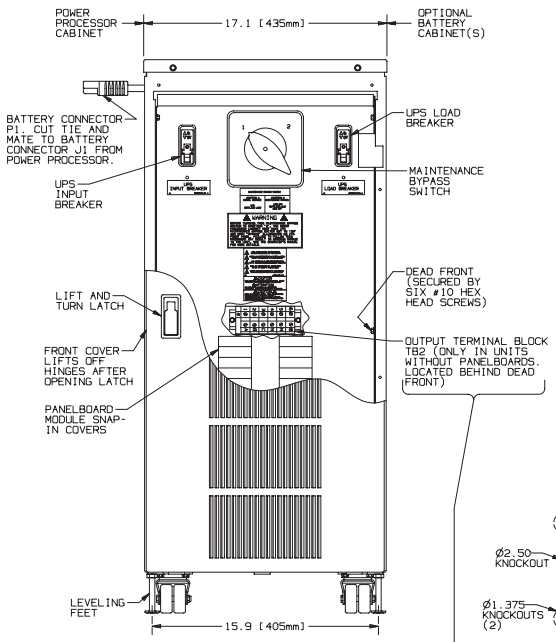
22) INSTALL THE SIDE COVER REMOVED IN STEP 9 ONTO THE CABINET ON THE FAR RIGHT.

23) REPLACE ALL TOP COVERS REMOVED IN STEPS 8 AND 11.

24) REPLACE ALL FRONT COVERS REMOVED IN STEPS 7 AND 11.

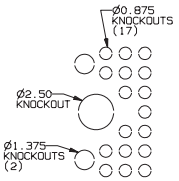
25) YOU HAVE NOW COMPLETED INSTALLATION OF YOUR UPS SYSTEM AND ARE READY FOR INITIAL POWER-UP. REFER TO OPERATOR'S MANUAL SECTION 2.7.

Description: Installation Drawing, 3600-024K & 3600-036K
Drawing No. 110718270 Revision D
Sheet 1 of 1



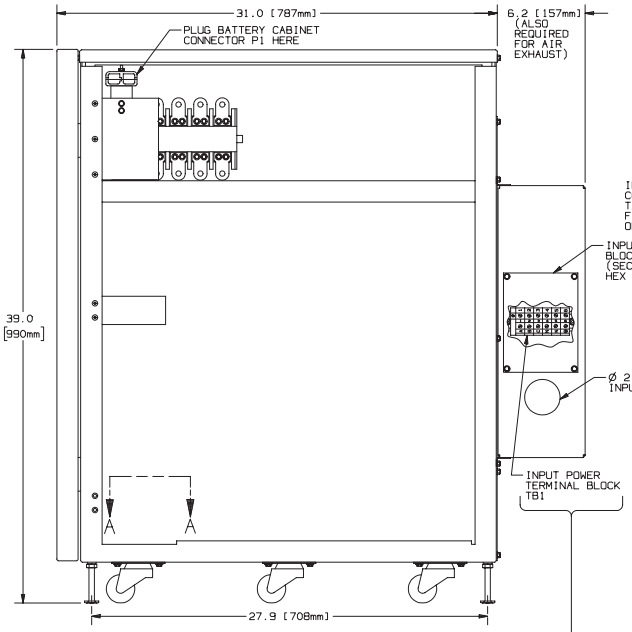
FRONT VIEW

SHOWN WITHOUT PDM OPTION



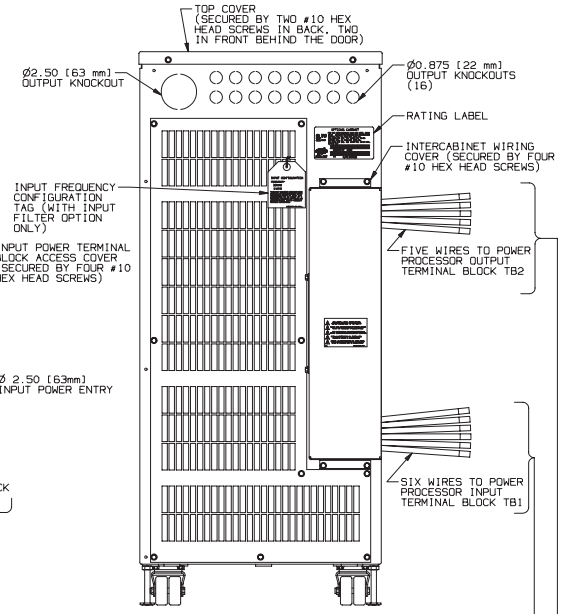
SECTION A-A

BOTTOM ENTRY CONDUIT KNOCKOUTS FOR OPTION CABINET OUTPUT WIRING



RIGHT SIDE VIEW

NO OPTIONS SHOWN



REAR VIEW

OPTIONS CABINET INFORMATION CHART	
MAXIMUM CABINET WEIGHT	900 POUNDS [409 KILOGRAMS]
MAXIMUM POINT LOADING	225 POUNDS [102.3 KILOGRAMS]
SHIPPING CONTAINER DIMENSIONS	43.1 [1,095 mm] HEIGHT x 22.0 [559 mm] WIDTH x 41.0 [1,041 mm] DEPTH
SHIPPING CONTAINER WEIGHT	40 POUNDS [18 KILOGRAMS]

NOTES:

1) READ ALL WARNINGS BEFORE PROCEEDING.
2) DO NOT TILT THE CABINET MORE THAN 12 DEGREES (UNIT MAY TIP OVER).
3) MAXIMUM ELEVATION FOR NORMAL OPERATION: 5000 FEET (1500 METERS) DERATING IS REQUIRED FOR HIGHER ELEVATIONS.
4) VENTILATION: NATURAL CONVECTION.
5) REFER TO DRAWING 110718270 FOR CABINET JOINING AND SEISMIC MOUNTING INSTRUCTIONS. INSTALLATION MUST BE MADE BY QUALIFIED SERVICE PERSONNEL.
6) INPUT NEUTRAL IS REQUIRED IF SINGLE-PHASE LOADS ARE TO BE SUPPLIED, AND IF OPTIONS CABINET HAS INPUT OR OUTPUT AUTO-TRANSFORMERS (380-480V 3Ø).

CUSTOMER CABLE TERMINATIONS				
WIRE FUNCTION		TERMINAL POSITION	TERMINAL WIRE SIZE RATING	* SUGGESTED WIRE SIZE
INPUT	ØA	TB1-1	6-1/0 AWG (16-50 mm²)	FOR 120/208 OR 127/220VAC INPUTS: 1/0 AWG (50 mm²) FOR ALL OTHER INPUTS: 4 AWG (25mm²)
	ØB	TB1-2		
	ØC	TB1-3		
	NEUTRAL	TB1-4		
	NEUTRAL	TB1-5		
	GROUND	TB1-6	6-2 AWG (16-35 mm²)	6 AWG (16 mm²)
OUTPUT (IF NO PDM OPTION)	ØA	TB2-1	6-1/0 AWG (16-50 mm²)	FOR 120/208 OR 127/220VAC OUTPUTS: 1/0 AWG (50 mm²) FOR ALL OTHER OUTPUTS: 4 AWG (25mm²)
	ØB	TB2-2		
	ØC	TB2-3		
	NEUTRAL	TB2-4		
	NEUTRAL	TB2-5		
	GROUND	TB2-6	6-2 AWG (16-35 mm²)	6 AWG (16 mm²)

* USE 75°C COPPER WIRE. SUGGESTED WIRE SIZE IS BASED ON USE WITH A MODEL 36 POWER PROCESSOR AT FULL LOAD RATINGS PER NEC CODE TABLE 310-16. BOTH INPUT AND OUTPUT NEUTRAL CONNECTIONS REQUIRE A TOTAL OF TWO WIRES AT THE SUGGESTED SIZE (ONE WIRE PER TERMINAL POSITION).

CABLE TERMINATIONS TO POWER PROCESSOR			
WIRE FUNCTION		WIRE NUMBER (FROM OPTIONS CABINET)	TERMINAL POSITION (IN POWER PROCESSOR)
INPUT TO POWER PROCESSOR	ØA	51 or 54	TB1-1
	ØB	52 or 55	TB1-2
	ØC	53 or 56	TB1-3
	NEUTRAL	57-1	TB1-4
	NEUTRAL	57-2	TB1-5
	GROUND	11	TB1-6
OUTPUT FROM POWER PROCESSOR	ØA	61	TB2-1
	ØB	62	TB2-2
	ØC	63	TB2-3
	NEUTRAL	64	TB2-4
	NEUTRAL	64	TB2-5

Description: Options Cabinet Outline and Installation Drawing, 3600-024K & 3600-036K
Drawing No. 110718271 Revision B
Sheet 1 of 2

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVERS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

1) VERIFY THAT YOUR SOURCE VOLTAGE MATCHES THE INPUT VOLTAGE SPECIFIED ON THE RATING LABEL OF THIS CABINET (IDENTIFIED IN THE FRONT VIEW ON SHEET ONE).

WIRING BETWEEN THE OPTIONS CABINET AND THE POWER PROCESSOR

2) REMOVE THE INTERCABINET WIRING COVER (IDENTIFIED IN THE REAR VIEW ON SHEET ONE). SAVE THE COVER AND SCREWS FOR LATER USE.

3) REMOVE THE CUSTOMER WIRING COVER OF THE POWER PROCESSOR (IDENTIFIED IN THE LEFT SIDE VIEW OF DRAWING 110718268). REFER TO THE LABELS ON THE INSIDE OF THAT COVER FOR TORQUE SPECIFICATIONS. SAVE THE COVER AND SCREWS FOR LATER USE.

4) PASS THE TWO SETS OF WIRES FROM THE OPTIONS CABINET (SHOWN IN THE REAR VIEW ON SHEET ONE) THRU THE CORRESPONDING ENTRY HOLES OF THE POWER PROCESSOR (SHOWN IN THE RIGHT SIDE VIEW OF DRAWING 110718268. LINE THE RIM OF THESE ENTRY HOLES WITH THE GROMMET MATERIAL PROVIDED IN THE OPTIONS CABINET JOINING KIT). CONNECT ALL WIRES PER THE "CABLE TERMINATIONS TO POWER PROCESSOR" TABLE ON SHEET ONE.

5) REINSTALL THE INTERCABINET WIRING COVER REMOVED IN STEP 2.

WIRING TO THE OPTIONS CABINET INPUT

6) REMOVE THE INPUT POWER TERMINAL BLOCK ACCESS COVER (IDENTIFIED IN THE RIGHT SIDE VIEW ON SHEET ONE). REFER TO THE LABEL ON THE INSIDE OF THE COVER FOR TORQUE SPECIFICATIONS. SAVE THE COVER AND SCREWS FOR LATER USE.

7) AFTER RUNNING CONDUIT TO THE INPUT POWER ENTRY (SHOWN IN THE RIGHT SIDE VIEW OF SHEET ONE), CONNECT YOUR VOLTAGE SOURCE TO INPUT POWER TERMINAL BLOCK TB1 OF THE OPTIONS CABINET. REFER TO THE "CUSTOMER CABLE TERMINATIONS" TABLE ON SHEET ONE FOR APPROPRIATE TERMINATIONS AND WIRE SIZES.

8) REINSTALL THE INPUT POWER TERMINAL BLOCK ACCESS COVER REMOVED IN STEP 6.

WIRING TO THE OPTIONS CABINET OUTPUT

9) REMOVE THE DEAD FRONT (IDENTIFIED IN THE FRONT VIEW OF SHEET ONE).

10) PREPARE THE KNOCKOUTS FOR BOTTOM ENTRY (SHOWN IN SECTION A-A OF THE RIGHT SIDE VIEW OF SHEET ONE) OR FOR BACK ENTRY (SHOWN IN THE REAR VIEW OF SHEET ONE).

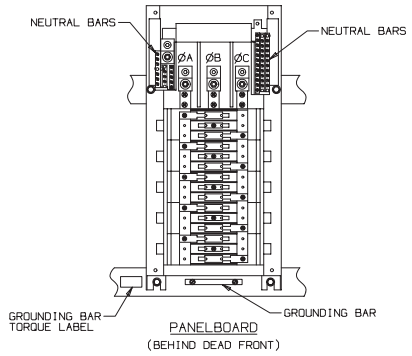
WIRING TO A TERMINAL BLOCK (NO PDM OPTION)

A) CONNECT YOUR OUTPUT WIRING TO OUTPUT TERMINAL BLOCK TB2 (IDENTIFIED IN THE FRONT VIEW ON SHEET ONE) PER THE "CUSTOMER CABLE TERMINATIONS" TABLE (ALSO ON SHEET ONE).

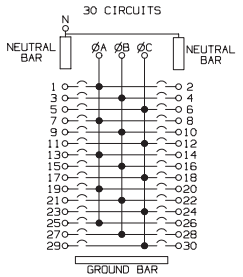
WIRING TO A PANELBOARD (PDM OPTION)

CAUTION

RISK OF ELECTRIC SHOCK. PANELBOARD IS STILL LIVE WHEN UPS INPUT BREAKER IS OFF. FOR SERVICING, TURN OFF UPS LOAD BREAKER.



PANELBOARD
(BEHIND DEAD FRONT)



PANELBOARD SCHEMATIC

A) INSTALL YOUR OUTPUT BREAKERS INTO THE PANELBOARD, REFERING TO THE SCHEMATIC ABOVE. THE PANELBOARD IS SQUARE D TYPE NQOM, AND IT CAN ACCEPT UP TO 30 SINGLE POLE SQUARE D TYPE QO OR TYPE QOB BREAKERS.

B) INSTALL YOUR OUTPUT WIRING, REFERING TO THE APPROPRIATE LABELS FOR WIRE SIZE AND TIGHTENING TORQUES.

C) REMOVE ONE PANELBOARD MODULE SNAP-IN COVER (IDENTIFIED IN THE FRONT VIEW ON SHEET ONE) FROM THE DEAD FRONT FOR EACH BREAKER POLE INSTALLED INTO THE PANELBOARD.

11) REINSTALL THE DEAD FRONT REMOVED IN STEP 9.

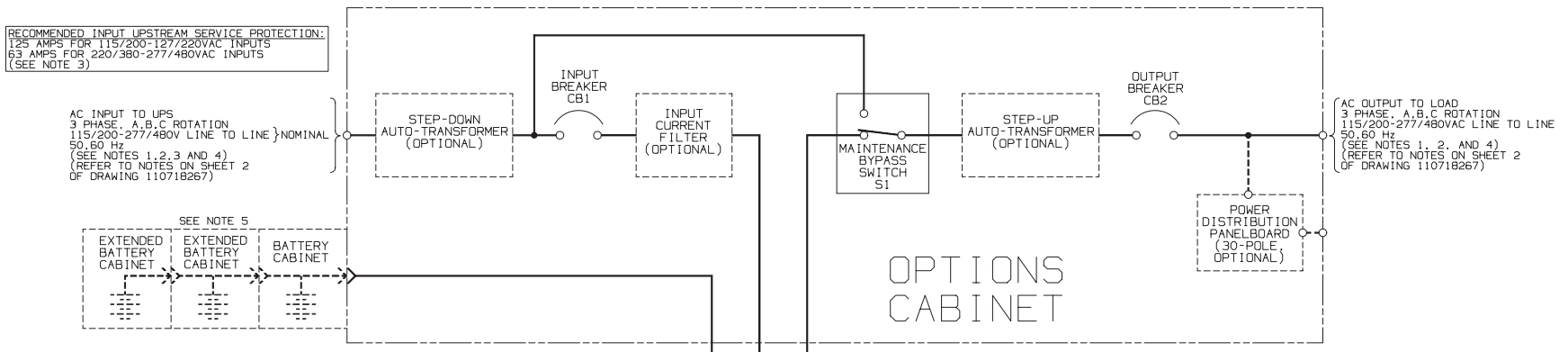
WIRING FOR BATTERY CABINETS

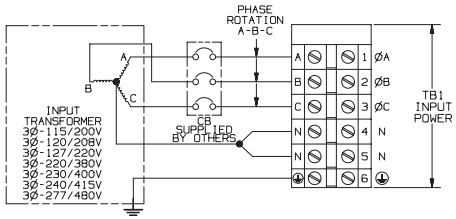
12) IF THIS SYSTEM IS TO BE CONNECTED TO BATTERY CABINETS, MATE BATTERY CONNECTOR P1 (IDENTIFIED IN THE FRONT VIEW ON SHEET ONE) TO BATTERY CONNECTOR J1 OF THE POWER PROCESSOR (SHOWN IN THE RIGHT SIDE VIEW OF DRAWING 110718268. READ THE CONNECTOR CAUTION ON THAT DRAWING BEFORE MATING).

COMPLETING SYSTEM INSTALLATION

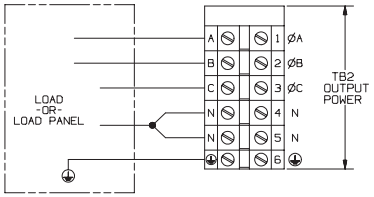
13) NOW RETURN TO INSTALLATION DRAWING 110718270 AT STEP 19 TO COMPLETE PHYSICAL INSTALLATION OF THE SYSTEM.

Description: Options Cabinet Outline and Installation Drawing, 3600-024K & 3600-036K
Drawing No. 110718271 Revision B
Sheet 2 of 2





TYPICAL INPUT CONNECTIONS



TYPICAL OUTPUT CONNECTIONS
(SEE DRAWING 110718271, SHEET TWO FOR PANELBOARD INFORMATION)

CAUTION

RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVERS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

NOTES:

1) REFER TO NATIONAL AND LOCAL ELECTRICAL CODES FOR ACCEPTABLE EXTERNAL WIRING PRACTICES.
2) MATERIAL AND LABOR FOR EXTERNAL WIRING ARE TO BE PROVIDED BY OTHERS.
3) AN EXTERNAL PROTECTIVE DEVICE FOR THE INPUT SOURCE MUST BE PROVIDED AND SIZED FOR THE CURRENTS INDICATED ON THE NAMEPLATE, PER NATIONAL AND LOCAL ELECTRICAL CODES. THE MAXIMUM PERMISSIBLE INPUT FAULT CURRENT IS 65,000 AMPERES. (NOTE: UPSTREAM PROTECTION MUST BE COORDINATED WITH LOAD CURRENT REQUIREMENTS UNDER NOMINAL AS WELL AS LOW LINE AND OVERLOAD CONDITIONS. FOR I-T NEUTRAL POWER SOURCES, UPSTREAM PROTECTION MUST SIMULTANEOUSLY DISCONNECT THE THREE PHASE CONDUCTORS AND THE NEUTRAL.)
4) THE UNIT SHALL BE GROUNDED AT THE INPUT TERMINAL BLOCK TO A SINGLE POINT LOCAL OR UTILITY EARTH GROUND. THE GROUND CONDUCTOR SHALL BE SIZED PER NATIONAL AND LOCAL ELECTRICAL CODE REQUIREMENTS. ON THE OUTPUT, FOLLOW APPLICABLE ELECTRICAL GROUNDING GUIDELINES. IN THE UNITED STATES, THE OUTPUT IS A "SEPARATELY DERIVED SOURCE".
5) WARNING: TO AVOID FIRE AND ELECTRIC SHOCK HAZARD, DO NOT CONNECT MORE THAN THREE BATTERY CABINETS TO THE POWER PROCESSOR CABINET.
6) REMOTE BATTERIES REQUIRE A DC BREAKER SUITABLE FOR BRANCH CIRCUIT PROTECTION (TO BE PROVIDED BY OTHERS).
7) THE MAXIMUM AVAILABLE FAULT CURRENT PERMITTED FROM A REMOTE BATTERY SUPPLY IS 6000 AMPERES.
8) INPUT NEUTRAL IS REQUIRED IF SINGLE-PHASE LOADS ARE TO BE SUPPLIED, AND IF OPTIONS CABINET HAS INPUT OR OUTPUT AUTO-TRANSFORMERS (380-480V 3Ø).

ELECTRICAL SPECIFICATIONS WITH AN OPTIONS CABINET

NOMINAL VOLTAGE	MODEL 24				MODEL 36			
	MAXIMUM kVA	NOMINAL kW	MAXIMUM RATED CURRENT PER PHASE		MAXIMUM kVA	NOMINAL kW	MAXIMUM RATED CURRENT PER PHASE	
			INPUT *,#	OUTPUT *,♩			INPUT *,#	OUTPUT *,♩
115/200VAC	23.0	16.0	58 A	67 A	34.5	24.0	87 A	100 A
120/208VAC	24.0	16.0	56 A	67 A	36.0	24.0	84 A	100 A
127/220VAC	24.0	16.0	53 A	63 A	36.0	24.0	79 A	94.5 A
220/380VAC	24.0	16.0	35 A	36 A	36.0	24.0	53 A	54.5 A
230/400VAC	24.0	16.0	34 A	35 A	36.0	24.0	51 A	52.2 A
240/415VAC	24.0	16.0	32 A	33 A	36.0	24.0	49 A	50 A
277/480VAC	24.0	16.0	28 A	29 A	36.0	24.0	42 A	43.3 A

* INPUT AND OUTPUT CURRENTS ARE APPROXIMATELY THE SAME WHEN LOAD IS POWERED THROUGH THE BYPASS.
# ADD UP TO 10.0 AMPERES PER PHASE FOR BATTERY CHARGER CURRENT FOR 115/200VAC, 120/208VAC, & 127/220VAC INPUTS. OR UP TO 7.0 AMPERES PER PHASE FOR 220/380VAC, 230/400VAC, 240/415VAC, & 277/480VAC INPUTS.
♩ NOMINAL CURRENT AT 0.67 POWER FACTOR.

Description: Oneline Diagram, 3600-024K & 3600-036K Options Cabinet
Drawing No. 110718296 Revision B
Sheet 1 of 1