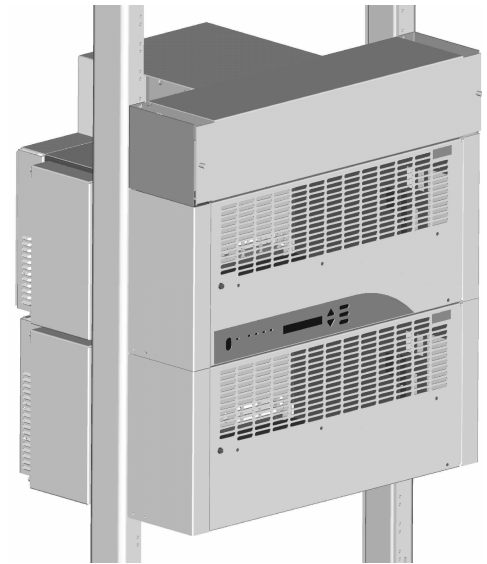


## SYSTEM OVERVIEW

**Description:** This system provides a solution to replace traditional power with power derived from the Vortex® platform, or to expand existing Vortex Power Systems (VPS's) to meet additional power needs. A VPS typically consists of ...

- one front access VPS Intelligence Shelf, which houses Power Conversion Units (PCU's). Also includes the Meter-Control-Alarm (MCA) assembly, which controls the operation of up to fifty-six (56) PCU's, and provides system metering, control, and alarm functions.
- one or more optional front access VPS Expansion Shelves, each of which houses PCU's.
- PCU's which provide load power, battery float current, and battery recharge current during normal operating conditions.



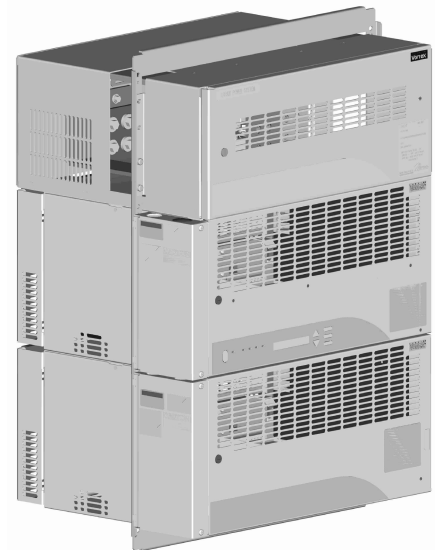
List 1 and 3 Shown  
List 2 and 4 Similar (no Intelligence Shelf)

**Family:** Vortex  
**Spec. No.:** 582122500  
**Model:** 1231V2  
**Output Voltage:** -48 Volts DC  
**Output Capacity System:** 1200 amperes, maximum, per bay  
**PCU:** 50 amperes or 65 amperes, per PCU

**Framework Type:** Relay Rack  
**Mounting Width:** 23 Inches per Bay  
**Mounting Depth:** 18 Inches  
**Access:** Front  
**Supplemental Bay(s):** Up to two (2) available  
**Control:** Microprocessor  
**Color:** Off-White (Lorain Spec. M500-117)  
**Options:** [PCU Intelligence Shelf](#), [PCU Expansion Shelf](#), [V50B50 PCU](#), [V65B50 PCU](#)

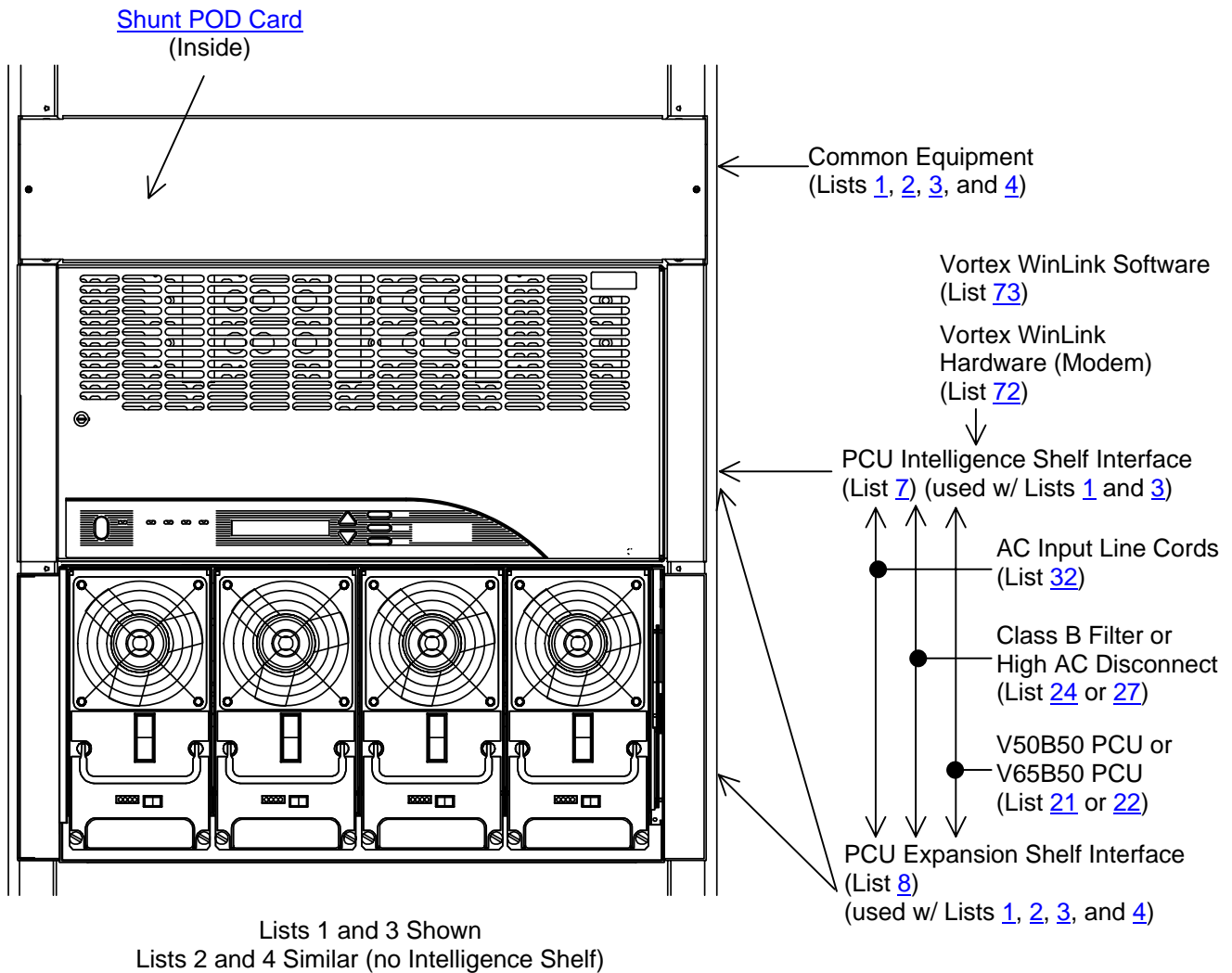
**Accessories:** [PCU Shelf Class B Filter](#), [PCU Shelf High AC Disconnect](#), [PCU Shelf AC Input Line Cords](#), [Vortex WinLink Hardware \(Modem\)](#), [Vortex WinLink Software](#)

**Environment:** 50°C



List 5 Shown  
List 6 Similar

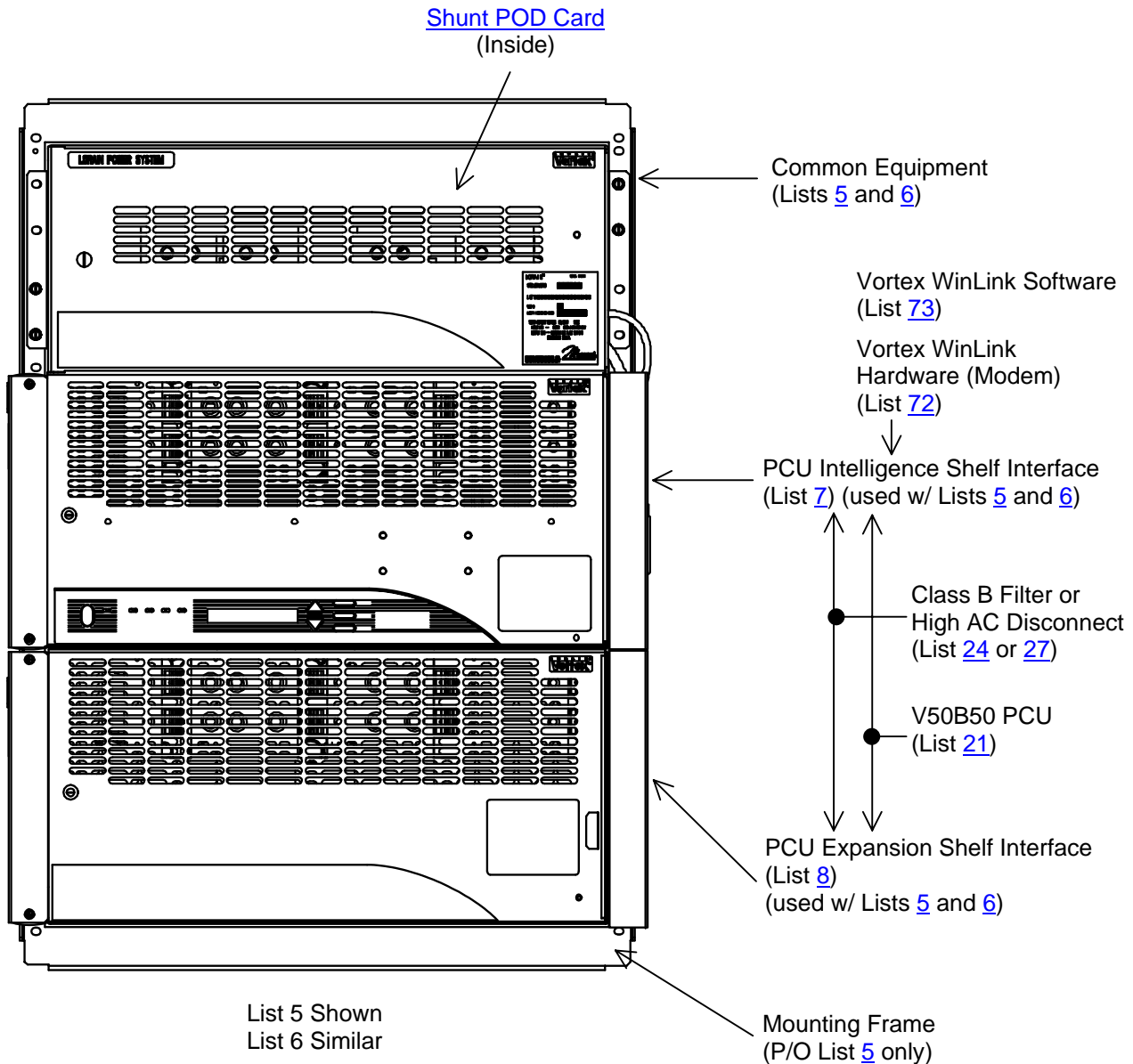
582122500 (Lists 1 through 4)



**SEE ALSO**

- [System Overview](#)
- [Table of Contents](#)
- [List Structure Table](#)
- [Lugs](#)
- [Relay Rack Options](#)
- [Replacement Cables](#)
- [List of Parts](#)
- [Dimensional Drawings](#)
- [Related Documentation](#)

**582122500 (Lists 5 and 6)**



**SEE ALSO**

- [System Overview](#)
- [Table of Contents](#)
- [List Structure Table](#)
- [Lugs](#)
- [Relay Rack Options](#)
- [Replacement Cables](#)
- [List of Parts](#)
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## LIST INFORMATION

### List Structure

List Number	Part Number	Description	Mounting Positions <i>(1U = 1-3/4")</i>
<a href="#">1</a>	58212250001	Common Equipment, Main Bay (Ship Loose)	3U <sup>1</sup>
<a href="#">2</a>	58212250002	Common Equipment, Supplemental Bay (Ship Loose)	3U <sup>1</sup>
<a href="#">3</a>	58212250003	Common Equipment, Main Bay (Factory Installed in Specified Relay Rack)	<a href="#">3U</a> <sup>1</sup>
<a href="#">4</a>	58212250004	Common Equipment, Supplemental Bay (Factory Installed in Specified Relay Rack)	<a href="#">3U</a> <sup>1</sup>
<a href="#">5</a>	58212250005	Common Equipment, Main Bay, Mounted on Shipping Frame	19U <sup>2</sup>
<a href="#">6</a>	58212250006	Common Equipment, Main Bay (Factory Installed in Specified Relay Rack)	<a href="#">5U</a> <sup>1</sup>
<a href="#">7</a>	58212250007	Interface Components for PCU Intelligence Shelf	6U
<a href="#">8</a>	58212250008	Interface Components for PCU Expansion Shelf	6U
<a href="#">21</a>	58212250021	V50B50 PCU for V200ICAB and V200ECAB Shelves	--
<a href="#">22</a>	58212250022	V65B50 PCU for V260ICAB and V260ECAB Shelves	--
<a href="#">24</a>	58212250024	Class B Filter for PCU Shelves	--
<a href="#">27</a>	58212250027	High AC Disconnect for PCU Shelves	--
<a href="#">32</a>	58212250032	AC Input Line Cords (Individual PCU Feeds) for PCU Shelves	--
<a href="#">72</a>	58212250072	Vortex WinLink Hardware (Modem) for PCU Intelligence Shelf	--
<a href="#">73</a>	58212250073	Vortex WinLink Software	--

<sup>1</sup> Lists 1-4, and 6: Mounting Positions Height **does not** include PCU Shelves.

<sup>2</sup> List 5: Mounting Positions Height **includes** two (2) PCU Shelves.

## List Descriptions

### List 1: Common Equipment for Main Power Bay (Ship Loose) [List of Parts](#)

#### Features

- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Provides a shunt POD circuit card (433800164) to allow current monitoring of an external load shunt. The Shunt POD interfaces with the VPS's MCA for remote shunt monitoring.
- ◆ Provides a "Connector Assembly" circuit card for external alarm, reference, and control connections; and system interconnects.
- ◆ Includes 60' long alarm extension cable, Part No. [421630900](#), for customer connections to VPS Intelligence Shelf external alarm and control circuits.

#### Restrictions

The system can consist of a main power bay, and up to two (2) supplemental power bays.

#### Ordering Notes

- 1) Components shipped loose for mounting on a customer provided relay rack.
- 2) Order PCU Shelf(s) as required per Lists [7](#) and [8](#).
- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#) and [32](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#) or [22](#).
- 5) Order Vortex WinLink Hardware and Software as required per List [72](#) and [73](#).
- 6) Order output lugs as required per [CRIMP LUGS](#) table.

### List 2: Common Equipment for Supplemental Power Bay (Ship Loose) [List of Parts](#)

#### Features

- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Includes 25' long interbay cable, Part No. [100575](#).

#### Restrictions

The system can consist of a main power bay, and up to two (2) supplemental power bays.

#### Ordering Notes

- 1) Components shipped loose for mounting on a customer provided relay rack.
- 2) Order PCU Shelf(s) as required per List [8](#).
- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#) and [32](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#) or [22](#).
- 5) Order output lugs as required per [CRIMP LUGS](#) table.

**List 3: Common Equipment for Main Power Bay (Factory Mounted in a Relay Rack)**

[List of Parts](#)

**Features**

- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Provides a shunt POD circuit card (433800164) to allow current monitoring of an external load shunt. The Shunt POD interfaces with the VPS's MCA for remote shunt monitoring.
- ◆ Provides a "Connector Assembly" circuit card for external alarm, reference, and control connections; and system interconnects.
- ◆ Includes 60' long alarm extension cable, Part No. [421630900](#), for customer connections to VPS Intelligence Shelf external alarm and control circuits.

**Restrictions**

The system can consist of a main power bay, and up to two (2) supplemental power bays.

**Ordering Notes**

- 1) Factory mounted in relay rack ordered per [RELAY RACK OPTIONS](#) table.
- 2) Order PCU Shelf(s) as required per Lists [7](#) and [8](#).
- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#) and [32](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#) or [22](#).
- 5) Order Vortex WinLink Hardware and Software as required per List [72](#) and [73](#).
- 6) Order output lugs as required per [CRIMP LUGS](#) table.

**List 4: Common Equipment for Supplemental Power Bay (Factory Mounted in a Relay Rack)**

[List of Parts](#)

**Features**

- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Includes 25' long interbay cable, Part No. [100575](#).

**Restrictions**

The system can consist of a main power bay, and up to two (2) supplemental power bays.

**Ordering Notes**

- 1) Factory mounted in relay rack ordered per [RELAY RACK OPTIONS](#) table.
- 2) Order PCU Shelf(s) as required per List [8](#).
- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#) and [32](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#) or [22](#).
- 5) Order output lugs as required per [CRIMP LUGS](#) table.

**List 5: Common Equipment for Main Power Bay Mounted on Shipping Frame**

[List of Parts](#)

**Features**

- ◆ All Equipment Cabinets Mounted to a Shipping Frame.
- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Provides 800A Internal Load Shunt.
- ◆ Provides a shunt POD circuit card (433800164) to allow current monitoring of the internal load shunt. The Shunt POD interfaces with the VPS's MCA for shunt monitoring.
- ◆ Provides a "Connector Assembly" circuit card for external alarm, reference, and control connections; and system interconnects.
- ◆ Includes 60' long alarm extension cable, Part No. [421630900](#), for customer connections to VPS Intelligence Shelf external alarm and control circuits.

**Restrictions**

The system consists of a main power bay only.

**Ordering Notes**

- 1) Components mounted on a shipping frame for mounting onto a customer provided relay rack.
- 2) Order PCU Shelf(s) as required per Lists [7](#) and [8](#).
- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#).
- 5) Order Vortex WinLink Hardware and Software as required per List [72](#) and [73](#).
- 6) Order output lugs as required per [CRIMP LUGS](#) table.

**List 6: Common Equipment for Main Power Bay (Factory Mounted in a Relay Rack)**

[List of Parts](#)

**Features**

- ◆ Provides output lead termination busbars for connection of customer DC power leads.
- ◆ Provides 800A Internal Load Shunt.
- ◆ Provides a shunt POD circuit card (433800164) to allow current monitoring of the internal load shunt. The Shunt POD interfaces with the VPS's MCA for shunt monitoring.
- ◆ Provides a "Connector Assembly" circuit card for external alarm, reference, and control connections; and system interconnects.
- ◆ Includes 60' long alarm extension cable, Part No. [421630900](#), for customer connections to VPS Intelligence Shelf external alarm and control circuits.

**Restrictions**

The system consists of a main power bay only.

**Ordering Notes**

- 1) Factory mounted in relay rack ordered per [RELAY RACK OPTIONS](#) table.
- 2) Order PCU Shelf(s) as required per Lists [7](#) and [8](#).



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- 3) Order PCU Shelf options as required per Lists [24](#) or [27](#); and the appropriate PCU Shelf [Power Data Sheet](#).
- 4) Order PCU's as required per List [21](#).
- 5) Order Vortex WinLink Hardware and Software as required per List [72](#) and [73](#).
- 6) Order output lugs as required per [CRIMP LUGS](#) table.

### **List 7: Interface Components for One (1) PCU Intelligence Shelf**

[List of Parts](#)

#### **Features**

- ◆ Provides components to add one (1) PCU Intelligence Shelf to the power system.  
Spec. No. 588700701 or 588703600 for Lists 1, 3, 5 and 6.  
Spec. No. 588704200 for Lists 5 and 6.
- ◆ Includes two interconnect cables, Part Nos. [421868200](#) and [100573](#).

#### **Restrictions**

Includes PCU Shelf interconnect components only.

Only one (1) PCU Intelligence Shelf required per system. Must be installed in main bay (List [1](#), [3](#), [5](#), or [6](#)).

Due to AC input connection routing, only one VPS Expansion Shelf (Spec No. 588704300) may be mounted directly below VPS Intelligence Shelf (Spec. No. 588704200).

#### **Ordering Notes**

- 1) Order PCU Shelf as required per PD588700701/PD588700801 or PD588703600/PD588703700 (Lists 1, 3, 5 and 6), or PD588704200/PD588704300 (Lists 5 and 6).
- 2) Order PCU Shelf options as required per Lists [24](#) or [27](#), [32](#), and [72](#); and PD588700701/PD588700801, or PD588703600/PD588703700, or PD588704200/PD588704300.
- 3) Order PCU's as required per List [21](#) or [22](#).

### **List 8: Interface Components for One (1) PCU Expansion Shelf**

[List of Parts](#)

#### **Features**

- ◆ Provides components to add one (1) PCU Expansion Shelf to the power system.  
Spec. No. 588700801 or 588703700 for Lists 1 through 6.  
Spec. No. 588704300 for Lists 5 and 6.
- ◆ Includes two (2) 347177800 shelf interconnect busbars.

#### **Restrictions**

Includes PCU Shelf interconnect components only.

Due to AC input connection routing, only one VPS Expansion Shelf (Spec No. 588704300) may be mounted directly below VPS Intelligence Shelf (Spec. No. 588704200).

#### **Ordering Notes**

- 1) Order PCU Shelf as required per PD588700701/PD588700801 or PD588703600/PD588703700 (Lists 1 through 6), or PD588704200/PD588704300 (Lists 5 and 6).
- 2) Order PCU Shelf options as required per Lists [24](#) or [27](#), [32](#), and [72](#); and PD588700701/PD588700801, or PD588703600/PD588703700, or PD588704200/PD588704300.
- 3) Order PCU's as required per List [21](#) or [22](#).

**List 21: V50B50 PCU** [List of Parts](#)

**Features**

- ◆ Provides one (1) Model V50B50 (-48V/50A), Spec. No. 486529902, PCU.

**Restrictions**

For use in Spec. No. 588700701, 588700801, 588704200, and 588704300 PCU Shelves only.

**Ordering Notes**

- 1) Each shelf holds up to four (4) PCU's.

**List 22: V65B50 PCU** [List of Parts](#)

**Features**

- ◆ Provides one (1) Model V65B50 (-48V/65A), Spec. No. 486531800, PCU.

**Restrictions**

For use in Spec. No. 588703600 and 588703700 PCU Shelves only.

**Ordering Notes**

- 1) Each shelf holds up to four (4) PCU's.

**List 24: Optional PCU Shelf Class B Filter** [List of Parts](#)

**Features**

- ◆ Consists of four Part No. 433800199 Input Filter Assemblies (one for each PCU mounting position in a single shelf) and capacitor pigtail assemblies. Refer to PD588700701/PD588700801, PD588703600/PD588703700, or PD588704200/PD588704300 for further description.

**Restrictions**

Cannot be installed if 582122500 List [27](#) ordered. The PCU Shelf can only accommodate 582122500 List [24](#) or 582122500 List [27](#), **not** both.

**Ordering Notes**

- 1) Specify one (1) List 24 per PCU Shelf.

**List 27: Optional PCU Shelf High AC Input Voltage Disconnect and Reconnect** [List of Parts](#)

**Features**

- ◆ Consists of four Part No. 486390500 High AC Input Voltage Disconnect and Reconnect circuit card assemblies (one for each PCU mounting position in a single shelf). Refer to PD588700701/PD588700801, PD588703600/PD588703700, or PD588704200/PD588704300 for further description.

**Restrictions**

Cannot be installed if 582122500 List [24](#) ordered. The PCU Shelf can only accommodate 582122500 List [24](#) or 582122500 List [27](#), **not** both.

**Ordering Notes**

- 1) Specify one (1) List 27 per PCU Shelf.

**List 32: PCU Shelf AC Input Line Cords** [List of Parts](#)

**Features**

- ◆ Consists of four (4) 14' long AC input line cords (one for each PCU mounting position in a single shelf). Refer to PD588700701/PD588700801 or PD588703600/PD588703700 for further description.

**Restrictions**

For use with PCU Shelves Spec. Nos. 588700701, 588700801, 588703600, and 588703700 only. CANNOT be used with PCU Shelves Spec. Nos. 588704200 and 588704300.

Must be used with the standard PCU Shelf AC input housing assembly. Cannot be used with the optional PCU Shelf single or dual feed AC input housing assemblies.

**Ordering Notes**

- 1) Specify one (1) List 32 per PCU Shelf.

**List 72: Vortex® WinLink Hardware (Modem Interface)** [List of Parts](#)

**Features**

- ◆ Provides Spec. No. 483215200 which consists of a 2400 bits/s Modem circuit card, Spec. No. 486781300, plus associated hardware.
- ◆ This option plugs into the side of the VPS Intelligence Shelf.

**Restrictions**

Only one interface option (Vortex WinLink Hardware or RS-485) can be installed on the VPS Intelligence Shelf.

Do not order this option when the VPS is to be interfaced with a Vortex SMART or SMART DGU.

**Ordering Notes**

- 1) Order this option for each VPS (MCA) to be accessed via Vortex WinLink Software.

**List 73: Vortex® WinLink Software** [List of Parts](#)

**Features**

- ◆ Provides Spec. No. 041182000 (Vortex WinLink Software).
- ◆ Vortex WinLink Software provides the user the ability to remotely communicate with multiple VPS's equipped with the Vortex WinLink Hardware option. Only one VPS can be remotely connected at a time. This allows a user to remotely monitor, control, and adjust the VPS via Vortex WinLink. Remote communication is done over dial-up phone lines when the VPS is equipped with the modem interface ([List 72](#)).
- ◆ With Vortex WinLink Software, the same tasks accomplished via the VPS's MCA local interface pad can be done remotely. This includes alarm monitoring, voltage/current monitoring, and adjustment of alarm and control circuits.
- ◆ The Vortex WinLink software, Spec. No. 041182000, runs under the Windows 95/NT platform.

**Ordering Notes**

- 1) Only one List 73 required for each computer installation.

## ACCESSORY INFORMATION

### Lugs

All lugs for customer connections must be ordered separately.

For lug selection, refer to the [CRIMP LUG TABLE](#).

For additional lug information, refer to Drawings 031110100 through 031110300.

### Output Lugs

Output lug requirements are determined by site requirements.

Output conductors and lugs are connected to the main and supplemental bays' output busbars. These busbars are provided with holes for installation of customer provided **two hole lugs** with **1 inch centers** and **3/8 inch bolt clearance** holes. Customer must provide lug mounting bolts and additional hardware. For lug mounting hole size and spacing dimensions, refer to [DIMENSIONS](#).

The output busbars are designed to accommodate the lugs listed in [Table 1](#). Use [Table 1](#) to select recommended output lead sizes and lugs for various bay output current capacities. Wire sizes based on recommendations of the National Electrical Code Table 310-16 for copper wire at 90°C conductor temperature, operating in ambient of 50°C. For operation in other ambients, see Table 310-16 of the National Electrical Code. Recommended wire sizes are sufficient to restrict voltage drop to the values listed in Table 1 at stated bay output current for the loop lengths listed in Table 1. Loop length is the sum of the lengths of the positive and negative leads.

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**Lug and Wire Selection Table**

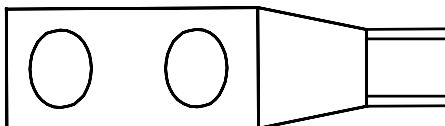
LUG AND WIRE SIZE SELECTION (Two-Hole Lug, 3/8" Bolt Clearance Hole, 1" Centers)					
Bay's Output Current	Loop Length*		Recm Wire Size*	Recommended Crimp Lug	
	0.25 Volt Drop	1.0 Volt Drop		Wire Stranding Class	Part No.
1200A	18 ft.	75 ft.	(Qty. 6) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)
1000A	18 ft.	75 ft.	(Qty. 5) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)
800A	18 ft.	75 ft.	(Qty. 4) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)
600A	18 ft.	75 ft.	(Qty. 3) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)
400A	18 ft.	75 ft.	(Qty. 2) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)
200A	18 ft.	75 ft.	(Qty. 1) 4/0 Ga.	B	245347400 (Burndy YA28L-2TC38)

\* Refer to [OUTPUT LUGS](#) for applicable information.

Table 1  
 Recommended Output Lead Sizes and Crimp Lugs

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**Standard Crimp Lug Part Numbers**



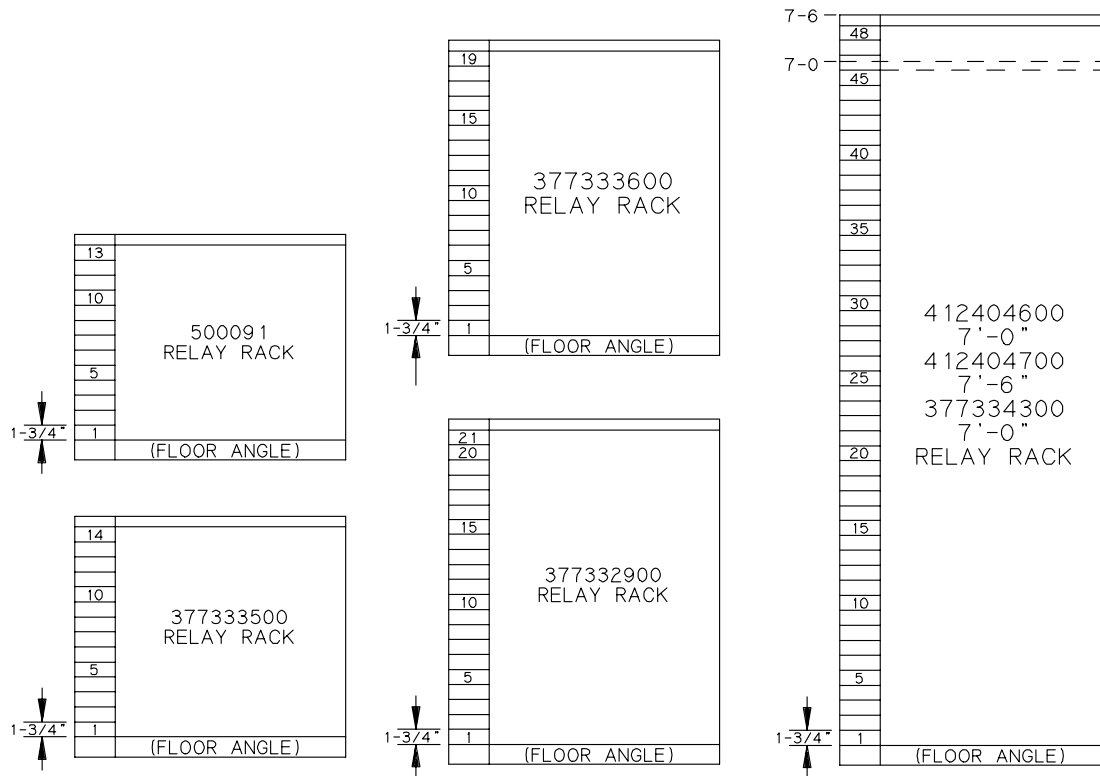
<b>CRIMP LUGS</b> <b>(Two-Hole, 3/8" Bolt Clearance Hole, 1.000" Centers)</b>	
<b>LEAD SIZE (Ga.)</b>	<b>PART NUMBER</b>
8	245349800
6	245349900
4	245350000
2	245348200
1/0	245347100
2/0	245347200
3/0	245347300
4/0	245347400
250 MCM	245347500
300 MCM	245347600
350 MCM	245347700
400 MCM	245347800
500 MCM	245347900
600 MCM	245348000
750 MCM	245348100

**Relay Rack Options (for use with Lists 3, 4, and 6 only)**

This system is factory mounted to the relay rack specified when ordered (List 3, 4, and 6 only). The following relay racks are available:

PART NUMBER	SIZE	AVAILABLE MOUNTING POSITIONS 1U = 1-3/4"	NOTES
500091	25-1/8"H x 23"W	13U	Allows for mounting of one (1) VPS PCU Shelf
377333500	27-1/2"H x 23"W	14U	Allows for mounting of one (1) VPS PCU Shelf
377333600	35-7/16"H x 23"W	19U	Allows for mounting of two (2) VPS PCU Shelves
377332900	39-1/8"H x 23"W	21U	Allows for mounting of two (2) VPS PCU Shelves with List 6 or three (3) with Lists 3 and 4
377334300	7'0"H x 23"W	45U	Seismic (complies with Bellcore Seismic Zone 4 requirements) Allows for mounting of up to six (6) VPS PCU Shelves
412404600	7'0"H x 23"W	45U	Allows for mounting of up to six (6) VPS PCU Shelves
412404700	7'6"H x 23"W	48U	Allows for mounting of up to six (6) VPS PCU Shelves

**Note 1:** For additional relay rack options, see drawing 412202500.



## Replacement Cables

### Ordering Notes

- 1) **Standard External Alarm Interconnect Cable:** Provides mating connector and sixty (60) foot long cable as a convenient method of connecting the external alarm wiring of the VPS Intelligence Shelf to customer circuits. Connects to J8 on the VPS Intelligence Shelf and provides 28 gauge leads to be spliced to customer leads. For a replacement cable, order Part No. 421630900 (60'0" cable). **Note:** For a longer cable, see **Optional Cables** below.
- 2) **VPS to VPS Interconnect Cable:** Provides mating connectors and cable as a convenient method of connecting the alarm, reference, and control leads of a VPS to a subsequent VPS. Connects between J1 on "Connector Assembly" circuit card 500441 located within the VPS and J2 on "Connector Assembly" circuit card 500441 located within the subsequent VPS. For a replacement cable, order Part No. 100916 (25'0" cable).
- 3) **"Connector Assembly" Circuit Card to VPS Intelligence Shelf (MCA) Interconnect Cable:** Provides mating connectors and cable as a convenient method of connecting the alarm, reference, and control terminals provided on the "Connector Assembly" circuit card for customer connections and system interface to the MCA in the VPS Intelligence Shelf. Connects between J2 on "Connector Assembly" circuit card 500441 located in the main VPS and J9 on the VPS Intelligence Shelf located within the same rack. For a replacement cable, order Part No. 421868200 (13.5" cable).
- 4) **"Connector Assembly" Circuit Card to VPS Intelligence Shelf (MCA/PCU's) Interconnect Cable:** Provides mating connectors and cable as a convenient method for MCA signal interconnection between the terminals provided on the "Connector Assembly" circuit card for customer connections and interface to PCU's located in other racks. Connects between J8, J9, or J10 on "Connector Assembly" circuit card 500441 located in the main VPS and J11 or J12 on the VPS Intelligence Shelf located within the same rack. For a replacement cable, order Part No. 100573 (11.5" cable).
- 5) **VPS Intelligence and Expansion Shelves Interconnect Cable (when located in same rack):** Provides mating connectors and cable as a convenient method for MCA signal interconnection between the VPS Intelligence Shelf and a VPS Expansion Shelf or between two VPS Expansion Shelves, located in the same rack. Connects between J11 and J12 of each shelf. A cable is provided with each VPS Expansion Shelf. For a replacement cable, order Part No. 100573 (11.5" cable).
- 6) **VPS Intelligence and Expansion Shelves Interconnect Cable (when located in separate racks):** Provides mating connectors and cable as a convenient method for MCA signal interconnection between VPS PCU Shelves located in separate racks. VPS PCU Shelves in the same rack are interconnected as described in 5). The VPS Intelligence Shelf is interconnected to the "Connector Assembly" circuit card as described in 4). Up to two additional racks of PCU Shelves are interconnected via the "Connector Assembly" circuit card. Each interconnect cable connects between J8, J9, or J10 on "Connector Assembly" circuit card 500441 located in the main VPS and J11 or J12 of the top most VPS PCU Shelf located in a separate rack. For a replacement cable, order Part No. 100575 (25'0" cable). A 12'0" cable is also available, Part No. 100574.

### **Optional Cables**

**External Alarm Interconnect Cable, Part no. 521216:** Provides mating connector and 100-foot long cable as a convenient method of connecting the external alarm wiring of the VPS Intelligence Shelf to customer circuits. Connects to J8 on the VPS Intelligence Shelf and provides 28 gauge leads to be spliced to customer leads. Provides alarm relay connections only. Does not provide external control connections for Remote HVSD, Remote Emergency Shutdown, or Remote Test/Equalize functions.

Can be used in place of the standard 60-ft.alarm cable, Part No. 421630900, when a longer cable is required and external control connections are not required.



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**LIST OF PARTS**

(This Stocklist may not list every component contained in each List.)

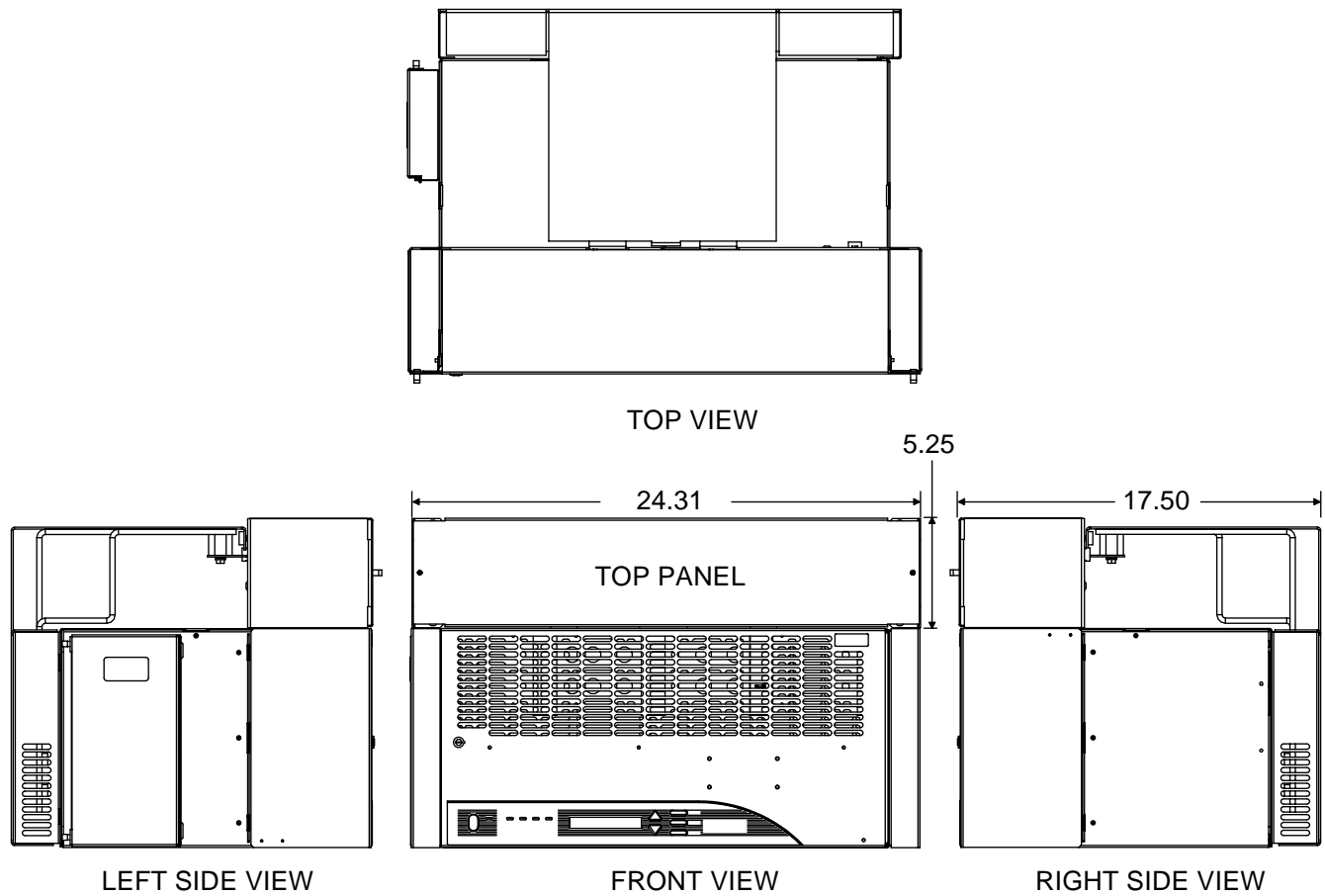
LIST NUMBER	QTY.	PART NUMBER	DESCRIPTION
<a href="#">1</a>	1	505287	Shield, E Shape, Rear Busbar
	1	505289	Busbar, C Shaped, Neg Bat
	1	505290	Busbar, Irregular U Shaped, Pos Bat
	1	505332	Assy, Alm/Interface
	1	505505	Hardware Kit
	1	421630900	Cable Assy
<a href="#">2</a>	1	100575	Cable Assy
	1	505169	Panel, Irreg, Busbar Support
	1	505286	Panel, Hat Shape, Shunt/Alm Interface
	1	505287	Shield, E Shape, Rear Busbar
	1	505289	Busbar, C Shaped, Neg Bat
	1	505290	Busbar, Irregular U Shaped, Pos Bat
<a href="#">3</a>	1	505287	Shield, E Shape, Rear Busbar
	1	505289	Busbar, C Shaped, Neg Bat
	1	505290	Busbar, Irregular U Shaped, Pos Bat
	1	505332	Assy, Alm/Interface
	1	505505	Hardware Kit
	1	421630900	Cable Assy
<a href="#">4</a>	1	100575	Cable Assy
	1	505169	Panel, Irreg, Busbar Support
	1	505286	Panel, Hat Shape, Shunt/Alm Interface
	1	505287	Shield, E Shape, Rear Busbar
	1	505289	Busbar, C Shaped, Neg Bat
	1	505290	Busbar, Irregular U Shaped, Pos Bat
<a href="#">5</a>	1	508573	Panel, Mounting Frame
	1	508586	Assy, Alm/Interface
	1	421630900	Cable Assy
<a href="#">6</a>	1	508586	Assy, Alm/Interface
	1	421630900	Cable Assy
<a href="#">7</a>	1	100573	Cable Assy
	1	505506	Hardware Kit
	1	421868200	Cable Assy
<a href="#">8</a>	2	347177800	Busbar & Associated Hardware
<a href="#">21</a>	1	486529902	Rect, Vortex PCU, 48V, 50A
<a href="#">22</a>	1	486531800	Rect, Vortex PCU, 48V, 65A
<a href="#">24</a>	6	425140100	Pigtail Assy
	2	425140400	Pigtail Assy
	2	425140600	Pigtail Assy
	4	433800199	Class B EMI Filter PW Assy
<a href="#">27</a>	4	486390500	High AC Volt Shutdown PW Assy

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LIST NUMBER	QTY.	PART NUMBER	DESCRIPTION
<a href="#">32</a>	1 1 1 1	104821 104836 104837 104838	Cord, AC Input Cord, AC Input Cord, AC Input Cord, AC Input
<a href="#">72</a>	1	483215200	Kit, MCA Modem Install
<a href="#">73</a>	1	041182000	Vortex WinLink Software

## PHYSICAL SIZE INFORMATION

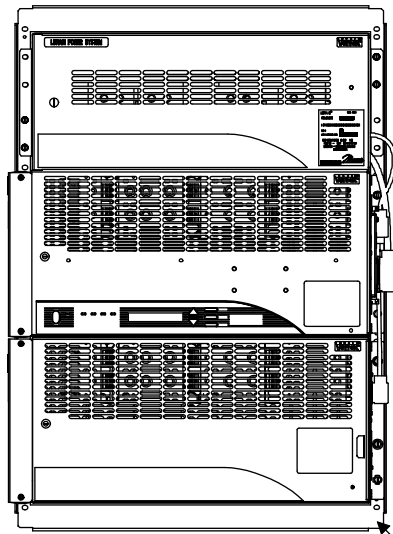
### Overall Dimensions - Lists 1-4



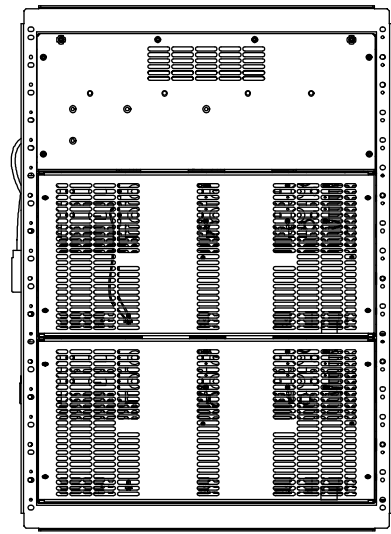
#### NOTES :

1. ALL DIMENSIONS ARE IN INCHES  
UNLESS OTHERWISE SPECIFIED.
2. WEIGHT IN LBS. (TOP PANEL AND BUSBARS ONLY)  
NET: 25  
SHIPPING: 30  
(refer to PCU Shelves Power Data Sheets for their weights)
3. FINISH: OFF-WHITE
4.  INDICATES  
VENTILATING  
GRILLE
5. REFER TO THE PCU SHELVES POWER  
DATA SHEETS FOR THEIR DIMENSIONS

**Overall Dimensions - Lists 5-6**

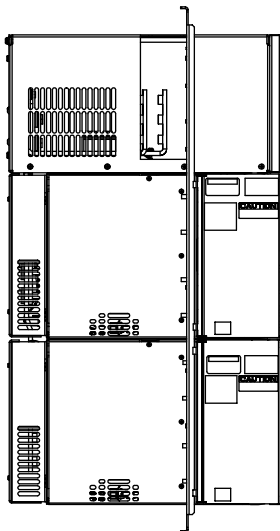


FRONT VIEW

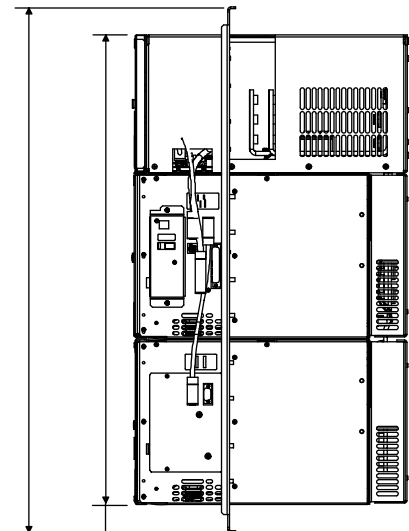


REAR VIEW

Mounting Frame  
(P/O List 5 Only)



LEFT SIDE VIEW




RIGHT SIDE VIEW

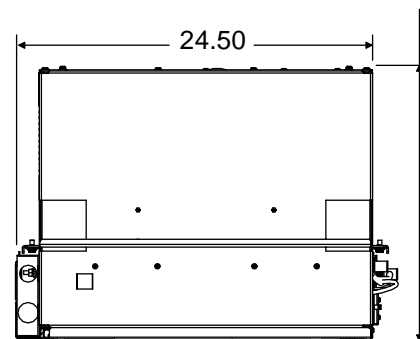
33.25 29.75

17.25

NOTES :

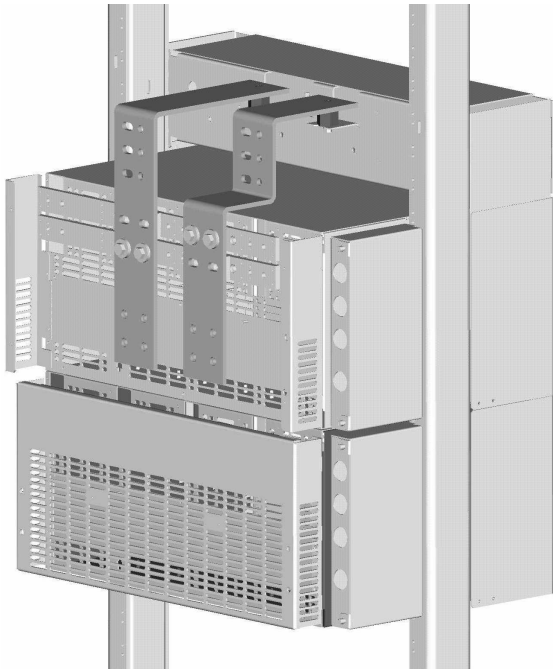
1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
2. WEIGHT IN LBS.  
(TOP CABINET, TWO PCU SHELVES, EIGHT PCU's, AND SHIPPING FRAME)  
NET: 207  
SHIPPING: 225
3. FINISH: OFF-WHITE

4.  INDICATES VENTILATING GRILLE

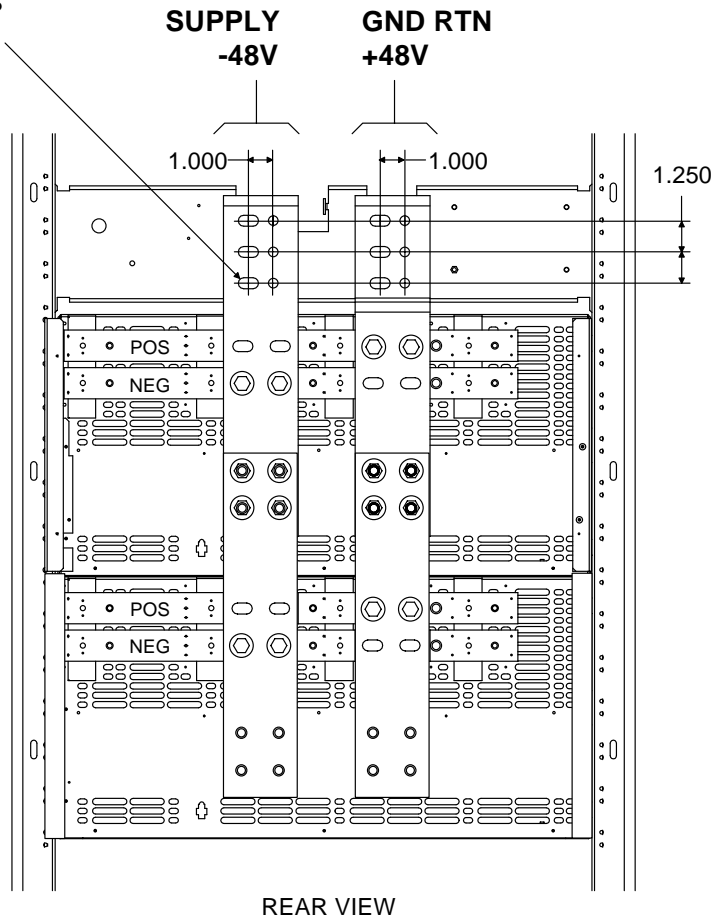


TOP VIEW

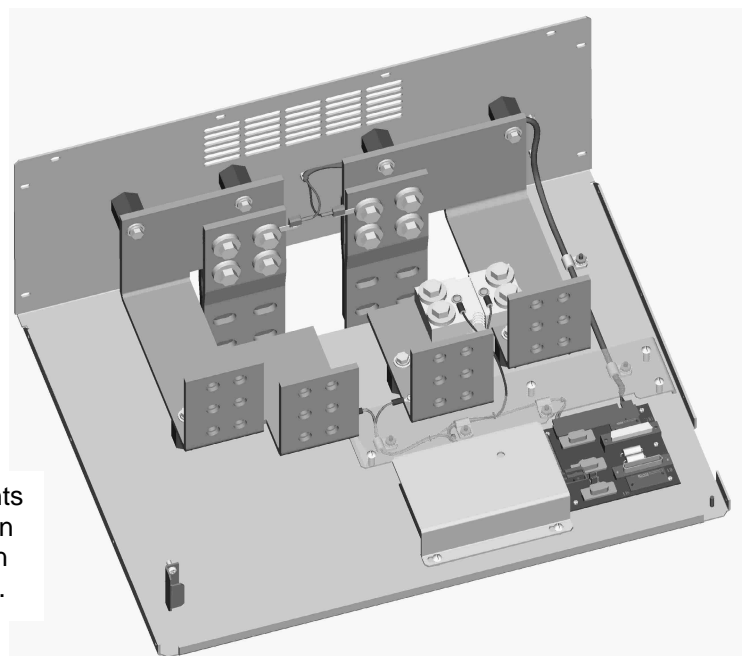
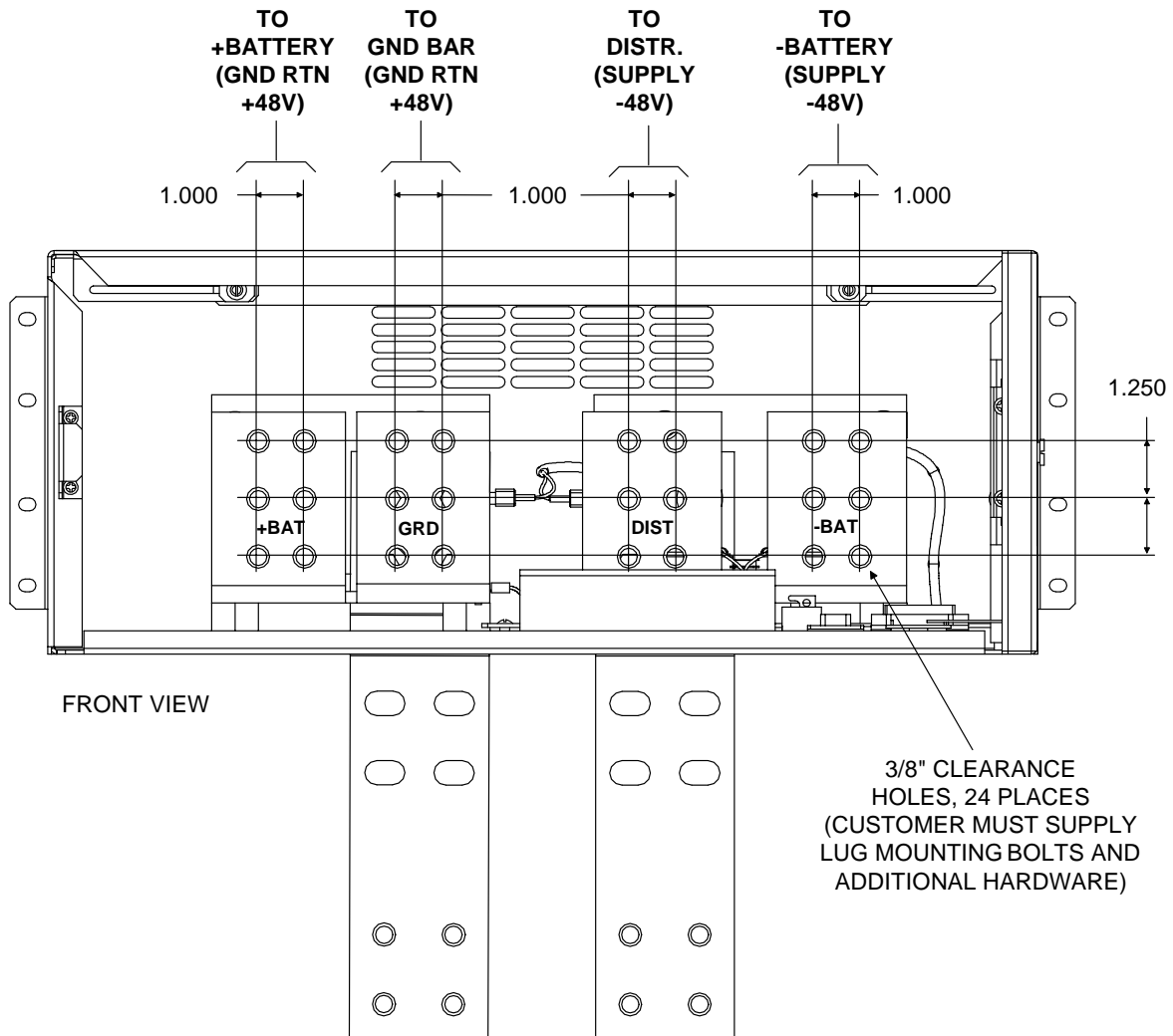
### Output Busbar Dimensions - Lists 1-4



3/8" CLEARANCE HOLES, 12 PLACES  
(CUSTOMER MUST SUPPLY  
LUG MOUNTING BOLTS AND  
ADDITIONAL HARDWARE)



### Output Busbar Dimensions - Lists 5-6



## RELATED DOCUMENTATION

### VPS Intelligence and Expansion Shelf Power Data Sheets (includes PCU and MCA info):

PD588700701/PD588700801 (V200ICAB/V200ECAB)  
PD588703600/PD588703700 (V260ICAB/V260ECAB)  
PD588704200/PD588704300 (V200ICAB/V200ECAB)

### Schematic Diagram:

SD582122500 (VPS)  
SD505332 (Alarm/Interface Panel)  
SD508586 (Alarm/Interface Panel)  
SD588700701 (V200ICAB)  
SD588700801 (V200ECAB)  
SD588703600 (V260ICAB)  
SD588703700 (V260ECAB)  
SD588704200 (V200ICAB)  
SD588704300 (V200ECAB)

### Wiring Diagram:

T505332 (Alarm/Interface Panel)  
T508586 (Alarm/Interface Panel)  
T588700701 (V200ICAB)  
T588700801 (V200ECAB)  
T588703600 (V260ICAB)  
T588703700 (V260ECAB)  
T588704200 (V200ICAB)  
T588704300 (V200ECAB)

### Color MCA Menu Tree:

Section 5762

### Instructions:

Section 5806 (System User Instructions)  
Section 5878 (System Installation Instructions)

### Load and Battery Lug Detail Drawings: 031110100 through 031110300

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**REVISION RECORD**

Rev	Change Number (ECO)	Description of Change	Date	Approved
AA	LLP010235	New	3/7/00	J. Jasko, S. Lewis
AB	LLP016262	List 5 and 6 added. 588704200 added to List 7. 588704300 added to List 8. Loop length for 0.25 volt drop added to Table 1. Revised ENVIRONMENT statement on 1 <sup>st</sup> page.	1/23/01	Steve McWilliams
AC	LLP033070	Spec. No. 588703600 and 588703700 PCU Shelves added. List 22 PCU added.	8/5/02	John Jasko
AD	LLP036276	RELATED DOCUMENTATION section updated.	09/26/03	John Jasko
AE	LLP202677	Name/Logo Change.	12/02/04	John Jasko
AF	LLP201418	Added P/N 521216 cable to Accessories.	3/18/05 3/21/05	P. Amato J. Kirkpatrick
AG	LLP205204	Revised List 7 and 8 features and ordering notes.	1/20/06	J. Kirkpatrick
AH	LLP210437	Part number 486529901 now 486529902.	07/31/08	John Jasko

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