

Infinity D Rectifier shelf

Models:

- CC109151288, 23", LVBD, -48V
- CC109148771, 23", LVBD, 24V
- CC109149662, 19", LVBD, 24V
- CC109150100, 19", LVBD, -48V
- CC109151107, 23", LVBD, -48V
- CC109151701, 23", LVBD, -48V
- CC109151718, 23", +24V
- CC109153648, 23", +24V
- CC109161337, 23", -48V

Quick Start Installation Guide



Install the shelf with a minimum gap of 3 inches behind the system to allow proper airflow. Attach the shelf to the frame using a minimum of six (three on each side) 12-24 screws included with the shelf. The shelf, depending on how it is ordered, can be mounted in a 19", 23" or 26" frame/rack.

Tools required: Torque wrench (0-65 in-lb) 5/16" and 7/16" nut drivers Cable crimpers
Screw Drivers (#1 Phillips) Wire cutters and strippers

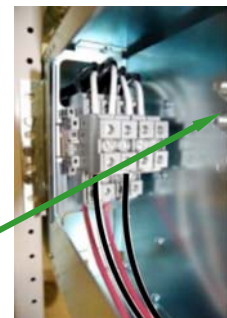
Step # 1 - Connect AC inputs

The AC access panel is on the left side of the shelf. Each rectifier position is factory configured for individual 208/240VAC inputs. Two rectifier positions can be fed from one ac source by installing the provided jumpers.

Danger: Disconnect all AC branch circuits prior to making ac connections to the system. When connecting to utility source, ensure compliance to all local and national wiring rules.

Caution: When routing AC ensure cables do not come in contact with sharp or rough surfaces that may damage insulation and cause a short circuit. Remove the two screws and cover to access the ac terminal blocks. Attach conduits to the knockout and route ac inputs through the conduit and knockouts.

AC terminal block.

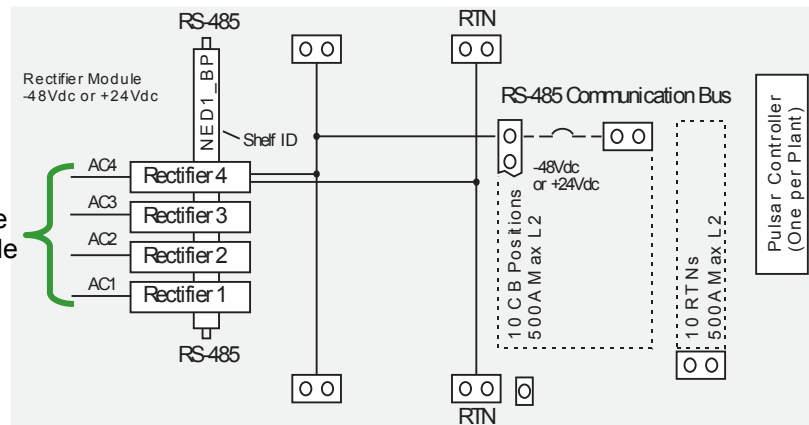


Ground (PE)

CC109138302, NE100AC24 Rectifiers *Input at 208 VAC			
Rectifiers per feed	*Input (Amps)	Input Cable Size	Input Breaker Size
1	14.5A	12 AWG	20A
2	29A	8 AWG	40A

CC109124913, NE050AC48 Rectifiers *Input at 208 VAC			
Rectifiers per feed	*Input (Amps)	Input Cable Size	Input Breaker Size
1	14.9A	12 AWG	20A
2	29.8A	8 AWG	40A




See table



Step # 2 - Connect AC inputs (continued)

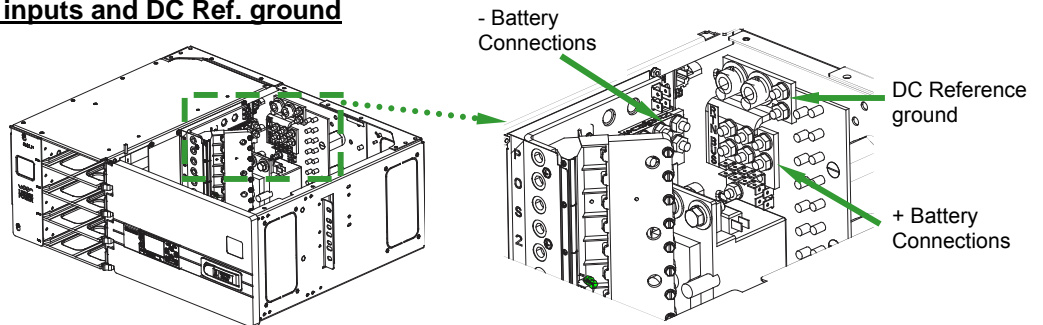
Loosen the two screws on the front of the input section and remove the cover.

Danger: Disconnect all ac branch circuits prior to making ac connections to the system. When connecting to utility source, ensure compliance to all local and national wiring rules.

Step	Action		Step	Action	
1.	Will each rectifier be fed from a single ac input?	Yes – Skip to step 4. No—Proceed to step 2.	2.	For applications using one ac feed for two rectifiers; Use needle nose pliers to remove the divider between the individual rectifier wire clamps that will share the ac input.	
3.	Install a strap between the two terminal blocks. Secure the strap in position with two screws and torque to 10 inch lbs. Straps and screws are provided.		4.	Attach the AC input wires to the terminal blocks and torque the wire clamps to 7 inch lbs.	

Step # 3 - Connect Battery inputs and DC Ref. ground

Three battery cable landings are available. Battery and DC Ref. ground connections are for lugs with 5/8" hole spacing and 1/4" hardware. Torque to 65 in-lbs.



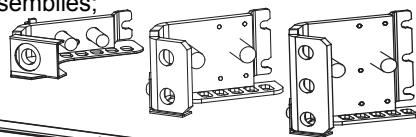
Step # 4 - Installing DC output circuit breakers

Circuit breakers and lug landing assemblies are required for each circuit. Install circuit breakers and distribution cables from the bottom to the top to allow cables to dress properly. Cables can dress up or down; knock outs are provided on the rear and side of the distribution area. One, two, three, four and five pole breakers are available. One, two and three pole lug landing assemblies mount to the circuit breaker mounting panel. Four and five pole lug landing assemblies attach to the circuit breaker before installation. Bus terminations are 1/4-20 double hole lugs on 5/8" centers. Torque connections to 65 in. lbs. using a 7/16" nut driver.

Danger: Remove or open circuit protectors prior to making connections to the system.

Slide the rear of the lug landing assembly under the retaining screw. Verify the hook engages in the slot at the front of the circuit breaker panel. Torque the retaining screw to 4 in-lbs.

One, two and three pole lug landing assemblies;

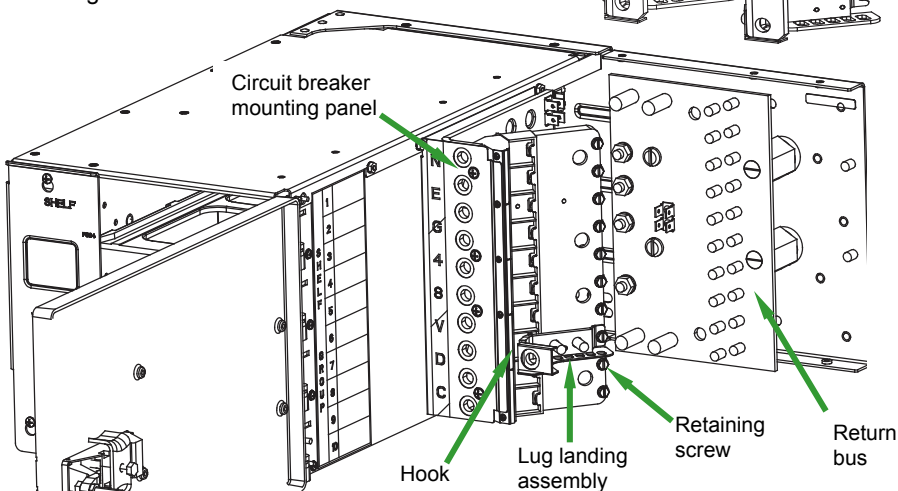


Install the circuit breaker with the alarm pin in the correct orientation as shown below.

Alarm Pin



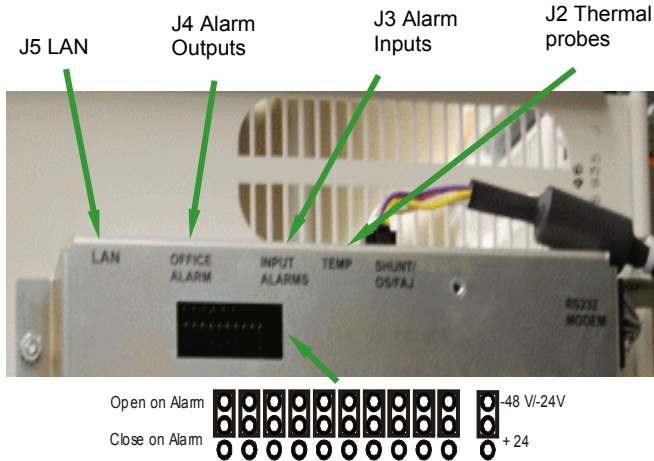
Correct circuit breaker orientation. Note: Alarm pin position.



Step # 5 - Controller connections

The Pulsar controller is mounted inside the door with the display on the front. See the picture below for LAN, Alarm Outputs, Alarm Inputs and alarm relay jumper options, (close or open on alarm), for the 5 available relays.

Warning: The equipment and subassembly ports can only be connected to shielded intra-building cabling grounded at both ends. The ports are suitable for connection to intrabuilding or unexposed wiring or cabling.



Factory Default Alarm Relay jumpers are Closed On Alarm

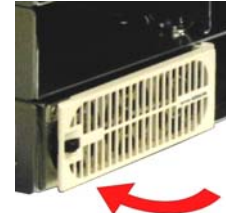
Alarm Output Cables		Alarm Input Cables	
Office Alarm Cables are 24AWG solid.			
CC848890137	5 ft.	CC848890153	5 ft.
CC109157442	15ft	CC848865980	15 ft.
CC848817635	50 ft	CC848817651	50 ft.
CC848817643	150 ft	CC848817668	150 ft.

Step # 6 - Rectifier Installation

Slide the rectifier into the rectifier slot approximately 3/4 of the way.

Open the faceplate by sliding the faceplate latch to the left until the faceplate releases and swings outward.

Slide the unit into the slot until it engages with the back of the shelf. Swing the faceplate closed to fully seat the converter. Verify the faceplate is latched.



Step # 7 - Initial Start Up

Verify all connections are complete and secure. Once this is complete turn on the AC input protectors. As each rectifier powers up the controller automatically identifies the new rectifier and begins communication. If there are no alarms, make adjustments to the default settings on the controller as required. Using the menu to configure settings is intuitive.

Information: Controller Basic Operation

Viewing and changing system parameters from the factory defaults can be accomplished in several ways; A) front display, B) Craft Port on front of controller using a laptop with EasyView2 software or HyperTerminal. EasyView2 (GUI) software can be downloaded from www.LineagePower.com, C) J5 LAN port in Static, Client, or Server mode. Static and Client modes are for accessing web pages through a network. Server mode allows local access to the controller web pages directly from a laptop connected to J5 LAN port; Server default IP address is 192.168.2.1. With the controller set to Server type the default IP address in the web browser address field. Server mode is a temporary setting, once configuration is complete reset the controller to Client or Static before connecting to the network. Static is the factory default setting and the typical setting for most networks. **Warning:** Do not connect J5 LAN port to a network when set to Server.

Information: Controller Basic Operation (Continued)

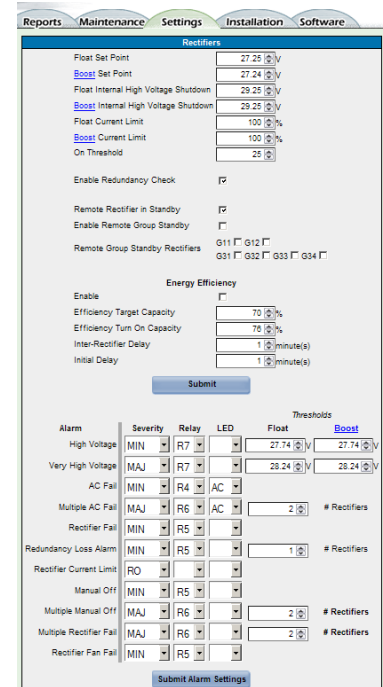
Controller Alarm Status: The display changes colors; Green = Normal, Amber = Minor Alarm, Red = Critical/Major Alarm.
Retiring Major/Minor Communication Fail Alarms; This alarm occurs when removing rectifiers from the shelf. To clear alarm reinstall the rectifier or select the *Maintenance* tab > *Clear missing devices*. Using web pages or EasyView2; Select the *Maintenance* tab > *clear latched events* and *clear missing devices*.

Installation Settings: Select the *Installation* tab to set the date, time, site ID and site description.

Defining Alarm Outputs: Select the *Settings* tab > *Rectifiers* to set alarm thresholds, severity and relays on J1 connector. Select the drop down arrow next to the LED field and select ALM to activate the ALM LED for that alarm condition. Factory defaults are shown in the table below.



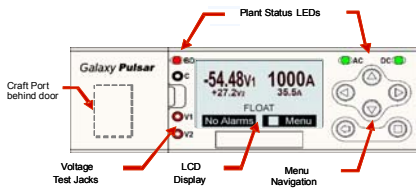
Web Home Page



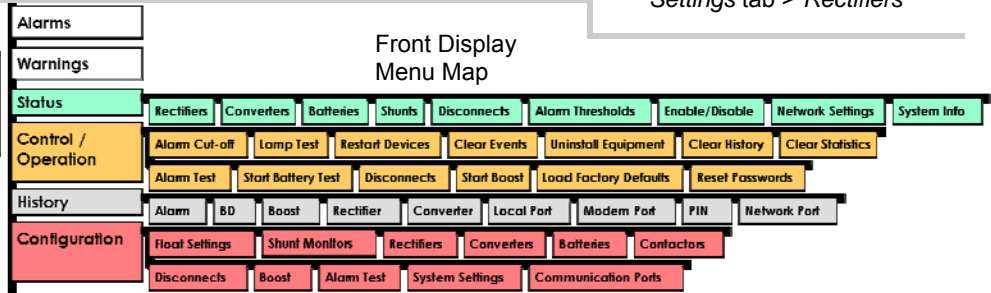
Settings tab > Rectifiers

Information: Controller Default Voltage Settings and Ranges

Controller Default Voltage Settings and Ranges	Range		48V Defaults	24V Defaults
	24V	48V		
Rectifier Internal Selective High Output Voltage Shutdown	25.0 to 30.0V	50.0 to 60.0V	58.0	29.0
High Output Voltage Major Alarm	25.0 to 30.0V	50.0 to 60.0V	56.0	28.5
High Output Voltage Minor Alarm	24.0 to 30.0V	48.0 to 60.0V	54.0	27.0
Output Voltage Set-Point	23.0 to 27.2V	46.0 to 54.5V	52.0	26.0
Low Voltage Alarm	20.0 to 27.0V	40.0 to 54.0V	46.0	23.0



Front Display

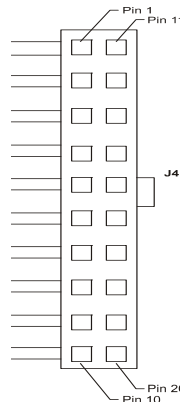


Information: Office Alarm Connections

Alarm Outputs

Alarm outputs are shown in the table below. Alarm relays are factory set to Closed On Alarm. If Open On Alarm is desired adjust controller alarm jumpers. See diagram in step 5. Connector J4 provides access to the primary customer alarm outputs. J4 is a 20-pin latching connector.

Standard Controller Alarm Output Defaults		Pin	Color Option 1	Color Option 2
PCR	Power Critical	1	BL	BL
PCR_C	Power Critical_C	11	W	BL/BK
PMJ	Power Major	2	O	O
PMJ_C	Power Major_C	12	W	O/BK
PMN	Power Minor	3	G	G
PMN_C	Power Minor_C	13	W	G/BK
R1	Battery On Discharge	4	BR	W
R1_C	Battery On Discharge_C (BD_C)	14	W	W/BK
R2	Very Low Voltage (VLV)	5	S	BK
R2_C	Very Low Voltage_C (VLV_C)	15	W	BK/W
R3	Fuse Alarm Major (FAJ)	6	BL	BL/W
R3_C	Fuse Alarm Major_C (FAJ_C)	16	R	BL/R
R4	AC Fail (ACF)	7	O	O/R
R4_C	AC Fail_C (ACF_C)	17	R	R
R5	Rectifier Fail (RFA)	8	G	G/W
R5_C	Rectifier Fail_C (RFA_C)	18	R	R/G
R6	Mult. Rectifier Fail (MRFA)	9	BR	W/R
R6_C	Mult. Rectifier Fail_C (MRFA_C)	19	R	R/W
R7	High Voltage (HV)	10	S	BK/R
R7_C	High Voltage_C (HV_C)	20	R	R/BK



Alarm Inputs

Alarm inputs are shown in the table below. Connector J3 provides access to the alarm inputs. Default alarm descriptions may be changed as needed using the web pages or Easyview2.

Standard Controller Alarm Input Defaults	Pin	Color
Air Con Fail	1	BK
Air Con Fail_Return	8	V
Door Open	2	BR
Door Open_Return	8	V
Aux PMJ Input	3	R
Battery Test/GSTR	4	O
Battery Test_Return	9	S
EPO	5	Y
EPO_Return	10	W
Hi ext. Temp.	6	G
Hi ext. Temp_Return	8	V
Low ext. Temp.	7	BL
Low ext. Temp_Return	8	V