

## Infinity 1U 19" Converter Shelf

**Models: J5964803      L217 - Individual +24V Inputs Bulk -48V Output**  
**L218 - Individual -48V Inputs Bulk +24V Output**



Edge Controller

This shelf converts: -48Vdc to +24Vdc with NE075DC24A converters  
-48Vdc to +12Vdc with NE075DC12A converters  
+24Vdc to -48Vdc with NE040DC48A converters  
+24Vdc to -48Vdc with NE030DC48A converters

A system can be configured with 1, or 2 shelves.

Refer to Infinity Converter Brochure for details and accessories.

**Document No. :** 850035834

## Information - Tools Required

- Wire cutters and strippers
- Torque wrench - 0-65 in-lb (0-10Nm)
- Cable crimpers
- Sockets - 5/16", 7/16, etc.

## Step 1 - Mount Shelf or Shelves

1. Reposition mounting ears as required for desired set back - 4 screws each. Torque to 25 in-lb (2.8Nm) - Phillips screwdriver.
2. For 23" frames - Install optional mounting brackets (separately ordered)
3. Attach shelf to the frame using a minimum of four screws (two on each side) - 12-24 (provided).
4. Torque to 35 in-lb (4Nm) - 5/16" socket.

No vertical spacing is required. Provide 2 inch minimum clearance at back of shelf for converter airflow.

## Step 2 - Plan DC Feeds

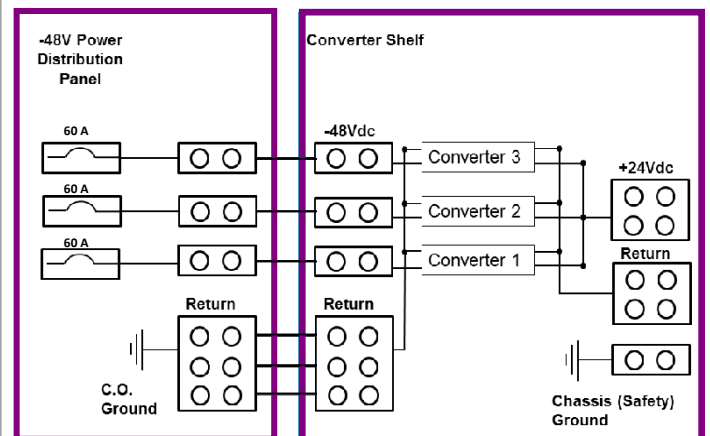
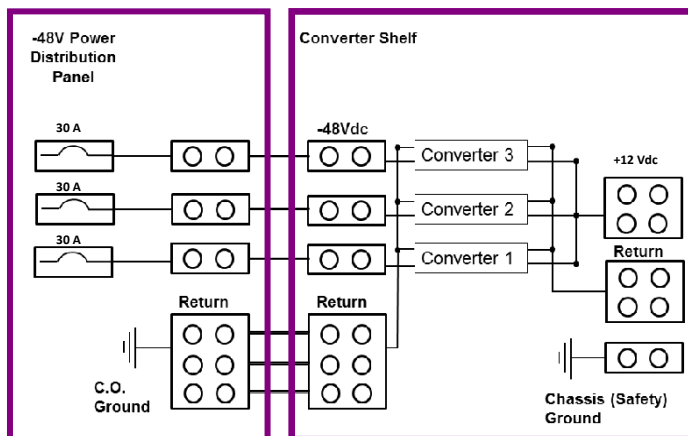
The shelf has individual converter input feeds and bulk output. Recommended breakers and cable sizes are in the tables below.

Note: Some installations do not require protectors on the inputs.

Note: Input returns must be externally connected to DC Reference (C.O.) Ground.

-48V in, +12V out NE075DC12A					
# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	24A	(1) 10 AWG	(1) 30A	75A	(1) 4 AWG
2	(2) 24A	(2) 10 AWG	(2) 30A	150A	(1) 2/0 AWG
3	(3) 24A	(3) 10 AWG	(3) 30A	225A	(2) 1/0 AWG

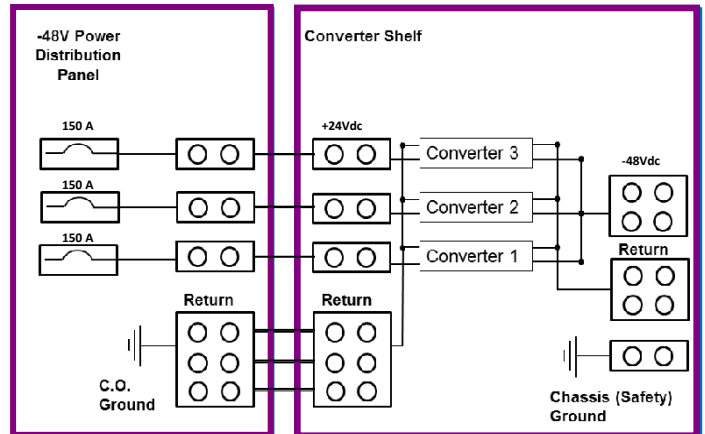
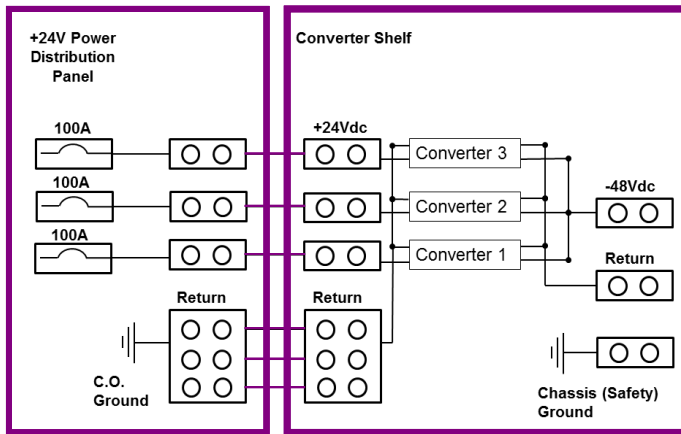
-48V in, +24V out NE075DC24A					
# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	48A	(1) 6 AWG	(1) 60A	75A	(1) 4 AWG
2	(2) 48A	(2) 6 AWG	(2) 60A	150A	(1) 1/0
3	(3) 48A	(3) 6 AWG	(3) 60A	225A	(2) 1/0



## Step 2 - Plan DC Feeds (Continued)

+24V in, -48V out NE030DC48A					
# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	80A	(1) 2 AWG	(1) 100A	30A	(1) 8 AWG
2	(2) 80A	(2) 2 AWG	(2) 100A	60A	(1) 6 AWG
3	(3) 80A	(3) 2 AWG	(3) 100A	90A	(1) 2 AWG

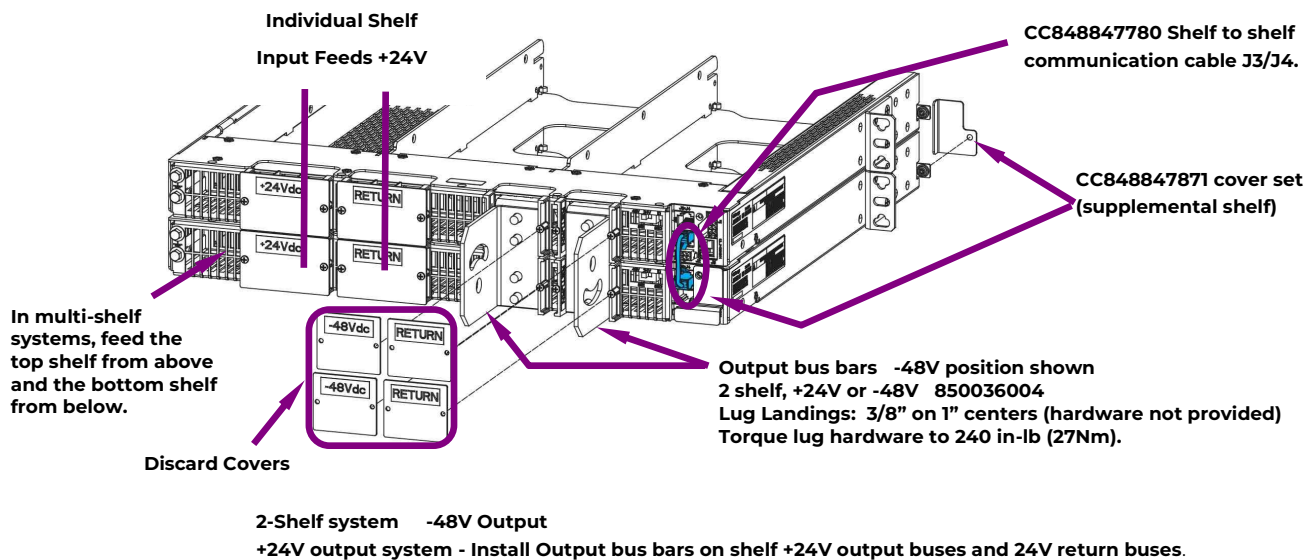
+24V in, -48V out NE040DC48A					
# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	115A	(1) 1/0	(1) 150A	40A	(1) 8 AWG
2	(2) 115A	(2) 1/0	(2) 150A	80A	(1) 2 AWG
3	(3) 115A	(3) 1/0	(3) 150A	120A	(1) 1/0



## Step 3 - Multi-Shelf System - Install Output Bus Bars, Covers, and Communications Cables

Two shelves can be interconnected with output bus bars for a single cable set connection to an external distribution panel.

1. Install output bus bars linking the shelf outputs together - -48V or +24V. Torque to 65 in-lb (7.3Nm) - 7/16" socket.
2. Install CC848847871 cover set (supplemental shelf).
3. Install CC848847780 shelf to shelf communication cable cables in daisy chain between shelves.



## Step 4 - Connect Chassis Ground, DC Reference (CO) Ground, and DC Cables

Connections are on the rear. Not provided: lugs, bus adapters, and bus adapter hardware.

**CAUTION:** Verify battery voltage and polarity with a voltmeter before proceeding.

**DANGER:** Protect input cables or disconnect all input circuit protectors prior to making connections to the system.

1. Ground chassis - 6AWG recommended, #10 or 1/4" on 5/8" center lug.

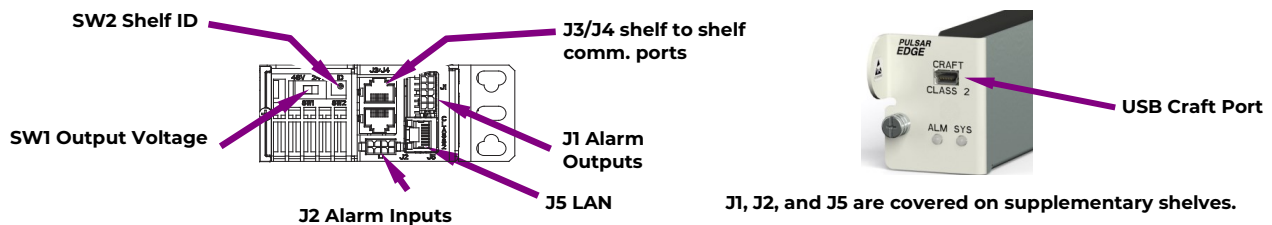
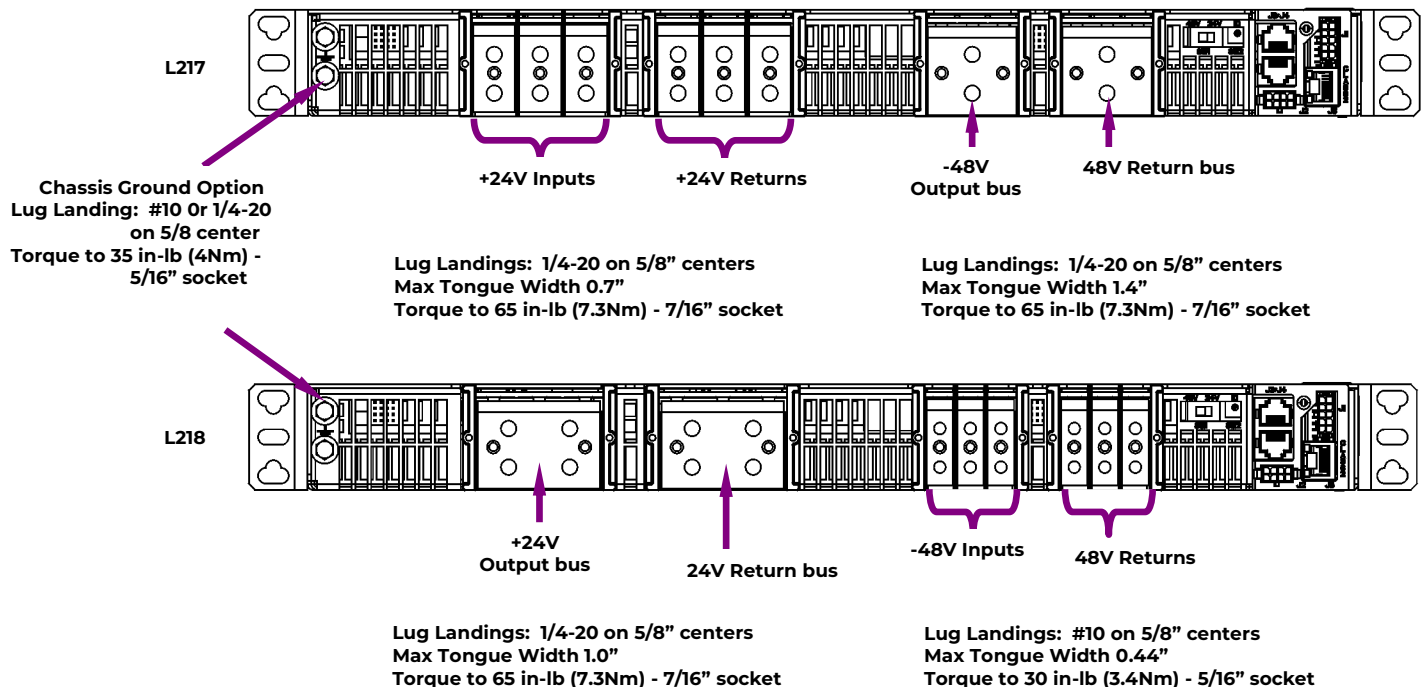
Torque to 35 in-lb (4Nm) - 5/16" socket.

Some applications rely on frame mounting screws for shelf ground omitting the shelf ground cable.

Some applications rely on grounding a single shelf of a multi-shelf system, omitting the shelf ground cable on remaining shelves.

2. DC Reference Ground - Make a single DC Reference (CO) Ground connection to Output Return either at the converter system or to the Return bar of external -48V distribution - 6AWG recommended.

3. Install DC cables.



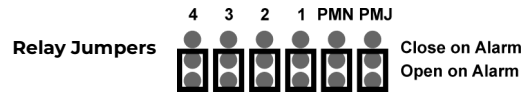
Signal Connections and Shelf Switches

## Step 5 - Set Shelf Switches

- SW1 Set converter output voltage: 48V for L217; 24V for L218. V Sense alarm if not set correctly.
- SW2 Set shelf number: 1 for first shelf; 2 for second shelf, etc.  
Converter ID conflict alarm if two shelves are set to the same number.

## Step 6 - Set Jumpers - LAN Port and Relay per Galaxy Pulsar Edge Controller

1. Set Jumpers - LAN Port and Relay



## Step 7 - Install Controller

- Controller has a thumb screw to secure it to the shelf.  
Controller installs into the Controller Slot on the left of the shelf.
1. Align Controller in the Controller Slot.
  2. Slide controller firmly into the slot.
  3. Secure with thumbscrew.

## Step 8 - Install Controller Communications Cables

- Connectors are on rear.  
See Information: Connections ... for Details
1. J1-2 Alarms and Inputs - Connect to office alarms and signals.
  2. J5 LAN - Connect to Ethernet network.

## Step 9 - Install Converters

<p>Slide the converter into the converter slot approximately 3/4 of the way.</p>	<p>Open the faceplate by sliding the faceplate latch to the left until the faceplate releases and swings outward.</p>	<p>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.</p>

## Step 10 - Initial Start Up

Verify that all AC, DC and Alarm connections are complete and secure. Turn on DC input breakers. If there are no alarms, make required adjustments to the default settings on the controller for this installation.

## Step 11 - Configure Controller per Galaxy Pulsar Edge Controller Quick Start Guide

Verify and edit controller basic configuration parameters per site engineering instructions.

### Information: Controller Define Alarm Inputs and Outputs

#### Converter Alarm Outputs:

Select the Settings tab > Converters 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 web page to the right.

#### Auxiliary Alarm Inputs:

Select the Settings tab > Auxiliary Inputs to define up to four external alarms through connector J2.

**Converter Alarm Outputs:**  
Settings tab > Converters

**Auxiliary Alarm Inputs:**  
Settings tab > Auxiliary Inputs

### Information: Controller Default Voltage Settings and Ranges

Parameter	Range		Default	
	24V	48V	48V	24V
Converter 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

### Information: Connections - Alarm - J1 and J2

See the Infinity Converter Ordering Guide for details.

Alarm connectors are on the rear of the shelf - J1 and J2.

Change alarm descriptions via LAN port (Web pages) or Craft port (EasyView2) when required.

J2	
Alarm Input Cable 24AWG solid	
Ordering code	Cable length
CC848890203	5 ft
CC848853614	15 ft
CC848890211	50 ft
CC848890228	150 ft

J1	
Alarm Output Cable 24AWG solid	
Ordering Codes	Cable Length
CC848890153	5 ft
CC848865980	15 ft
CC848817651	50 ft
CC848817668	150 ft

Pin	Color	Description
1	Y	Input: SPD Fail
2	S	--
3	O	Input: AUX MAJ
4	V	Input: Air Cond. Fail
5	W	Input: Door Open
6	BL	-48V
7	BR	-48V
8	BK	-48V

Pin	Color	Description
1	BK	Output: R3 = Rtn
2	BR	Output: R2 = Rtn
3	R	Output: R1 = Rtn
4	O	Output: PMN Rtn
5	Y	Output: PMJ Rtn
6	G	Output: R3 = Converter Distribution Fuse
7	BL	Output: R2 = Converter Fail
8	V	Output: R1 = Very Low System Voltage
9	S	Output: PMN
10	W	Output: PMJ

## Specifications and Application

Specifications and ordering information are in the Infinity Converter Brochure available at <https://omnionpower.com>

- Equipment and subassembly ports:
  - are suitable for connection to intra-building or unexposed wiring or cabling
  - can be connected to shielded intra-building cabling grounded at both ends
- Grounding / Bonding Network – Connect to an Isolated Ground Plane (Isolated Bonding Network) or an Integrated Ground Plane (Mesh-Bonding Network or Common Bonding Network).
- Installation Environment - Install in Network Telecommunication Facilities, OSP, or where NEC applies.
- Battery return may be either Isolated DC return (DC-I) or Common DC return (DC-C).

## Reference Documents

These documents are available at <https://omnionpower.com>

### Document Title

850035894	Galaxy Pulsar Edge Quick Start Guide
CC848815341	Pulsar Edge Controller Family Product Manual Infinity Converter Brochure

## Notes



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## Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
3.0	05/17/2021	Template Change
3.1	05/15/2024	Updated as per OmniOn template

## **OmniOn Power Inc.**

601 Shiloh Rd.  
Plano, TX USA

[omnionpower.com](http://omnionpower.com)

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