

Infinity 1U 19" Converter Shelf Bulk Input & Output

Quick Start Guide: CC848924150

Models: J5964803: L219 primary (with controller) plus L222 supplemental (without controller),
OR L220 for controllerless systems



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, 2 or 3 shelves.

Refer to Infinity Converter Brochure for details and accessories.

Information – Tools Required

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

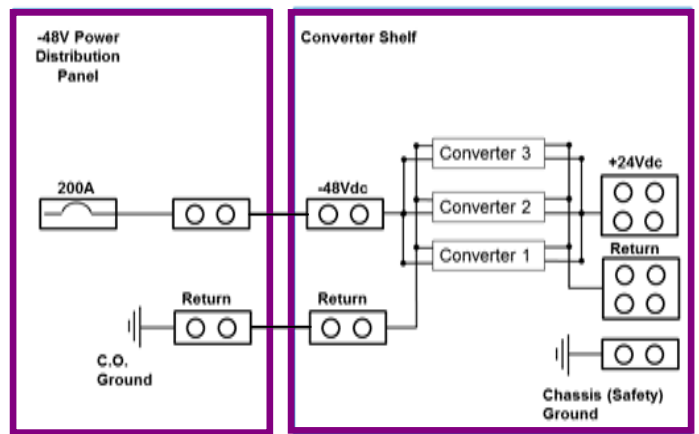
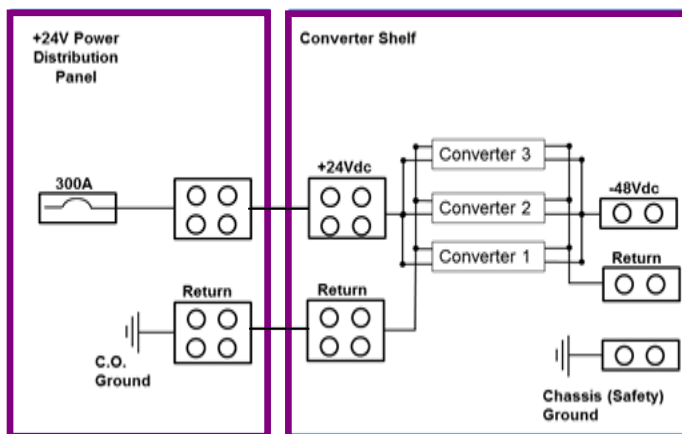
Step 2 – Plan DC Feeds

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.

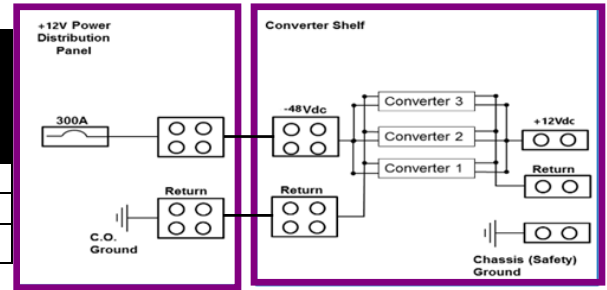
Note: Input returns must be externally connected to DC Reference (C.O.) Ground.

+24V in, -48V out NE030DC48A						-48V in, +24V out NE075DC24A					
# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size	# Of Conv.	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	80A	(1) 2 AWG	100A	30A	(1) 8 AWG	1	55A	(2) 2 AWG	70A	70A	(1) 4 AWG
2	160A	(1) 2/0	200A	60A	(1) 6 AWG	2	110A	(1) 2/0	150A	150A	(1) 1/0 AWG
3	240A	(2) 2/0	100A	90A	(1) 2 AWG	3	165A	(1) 2/0	200A	225A	(2) 1/0AWG



Step 2 – Plan DC Feeds (Continued)

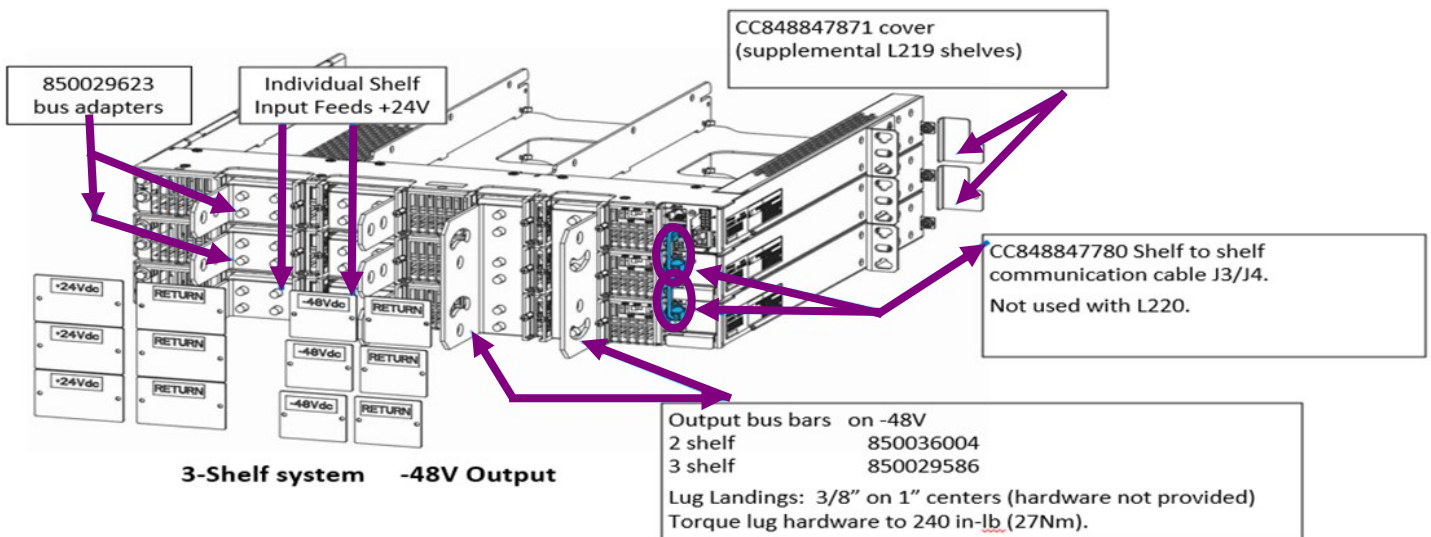
-48V IN, +12V OUT, NE075DC12A					
# Of Conv	Input Amps	Input Cable Size	Input Breaker Size	Output Amps	Output Cable Size
1	30A	(1) 6 AWG	50A	75A	(1) 2 AWG
2	60A	(1) 4 AWG	80A	150A	(1) 2/0 AWG
3	90A	(1) 2 AWG	120A	225A	(2) 2/0 AWG



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

Two or Three 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. Torque to 65 in-lb (7.3Nm) – 7/16” socket.
shelf bus bar – 850036004 #3 shelf bus bar – 850029586
2. Install 850029623 bus adapters as required for input cable access. Torque to 65 in-lb. (7.3Nm) - 7/16” socket – See above.
3. Install CC848847871 cover (each supplemental L219).



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.

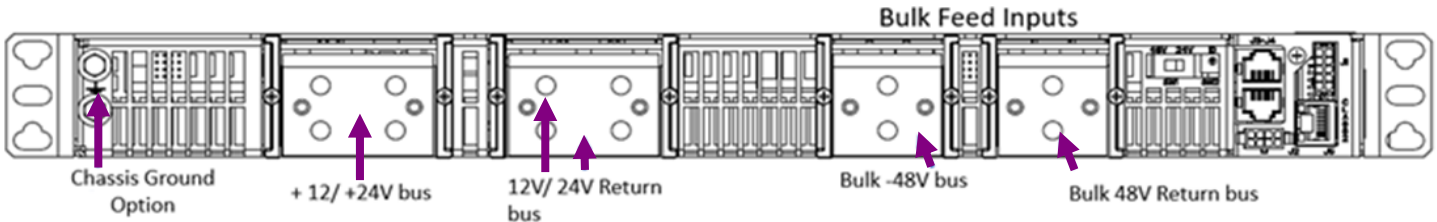
1. Ground chassis - 6AWG recommended, #10 or 1/4” on 5/8” center lug.

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.
 Bus Lug Landings: 1/4-20 on 5/8" centers. Max tongue width: 12V/24V = 1", 48V = 1.4"
 Torque to 65 in-lb. (7.3Nm) - 7/16" socket.
 Bus Adapter Lug Landings: 3/8" on 1" centers. Max tongue width: 1.4"
 Torque to 240 in-lb. (27Nm).



Step 5 – Set Shelf Switches

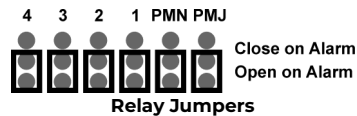
SW1 Set converter output voltage: [-48V] for NE030DC48A; [24V] for NE075DC24A or [12V] for NE075DC12A.

V Sense alarm if not set correctly.

SW2 L219 and L222: 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 Quick Start Guide

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.



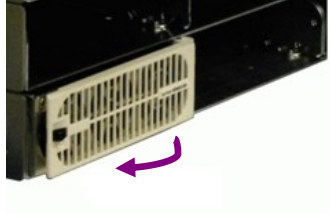
1. Align Controller in the Controller Slot.
2. Slide controller firmly into the slot.
3. Secure with thumbscrew.

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:

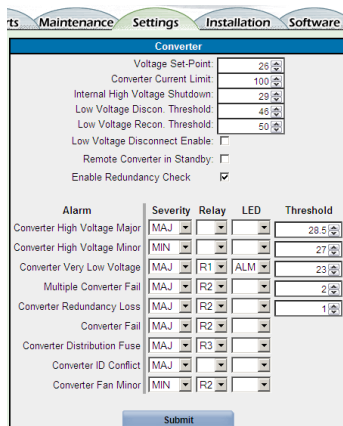
Select the Settings tab > Converters to set alarm thresholds, severity and relays on J1 connector.

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.

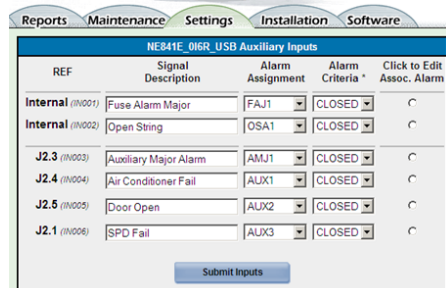
Auxiliary Alarm Inputs:

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



Alarm	Severity	Relay	LED	Threshold
Converter High Voltage Major	MAJ			28.5
Converter High Voltage Minor	MIN			27
Converter Very Low Voltage	MAJ	R1	ALM	23
Multiple Converter Fail	MAJ	R2		2
Converter Redundancy Loss	MAJ	R2		1
Converter Fail	MAJ	R2		
Converter Distribution Fuse	MAJ	R3		
Converter ID Conflict	MAJ			
Converter Fan Minor	MIN	R2		

Converter Alarm Outputs:
Settings tab > Converters



REF	Signal Description	Alarm Assignment	Alarm Criteria *	Click to Edit Assoc. Alarm
Internal (I#001)	Fuse Alarm Major	FAJ1	CLOSED	
Internal (I#002)	Open String	OSA1	CLOSED	
J2.3 (I#003)	Auxiliary Major Alarm	AMJ1	CLOSED	
J2.4 (I#004)	Air Conditioner Fail	AUX1	CLOSED	
J2.5 (I#005)	Door Open	AUX2	CLOSED	
J2.1 (I#006)	SPD Fail	AUX3	CLOSED	

Auxiliary Alarm Inputs:
Settings tab > Auxiliary Inputs

Information: Controller Default Voltage Settings and Ranges

Parameter	Range				Default	
	12V	24V	48V	48V	24V	12V
Converter Internal Selective High Output Voltage Shutdown - ISHVSD	11.0 to 15.5V	25.0 to 30.0V	50.0 to 60.0V	58.0	29.0	14.5
High Output Voltage Major Alarm – CHVA	11.0 to 15.5V	25.0 to 30.0V	50.0 to 60.0V	56.0	28.5	14.0
High Output Voltage Minor Alarm – CHFV	11.5 to 15.5V	24.0 to 30.0V	48.0 to 60.0V	54.0	27.0	13.5
Output Voltage Set-Point	10.5 to 14.5V	23.0 to 27.2V	46.0 to 54.5V	52.0	26.0	12.0
Low Voltage Alarm – CVLA	7.5 to 14.5V	20.0 to 27.0V	40.0 to 54.0V	46.0	23.0	9.0

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 24GA 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

omnionpower.com

- Equipment and subassembly ports:
 1. are suitable for connection to intra-building or unexposed wiring or cabling
 2. 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 omnionpower.com

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

Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
9.0	12/27/2021	Updates as per template, Removed L218 model from applicability, Removed figure from step 4.
10.0	08/16/2023	Updated subtitle
10.1	10/27/2023	Updated as per OmniOn template

Notes

Notes

Notes

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