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

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.

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

**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

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

### 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.
Information: Controller Default Voltage Settings and Ranges

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

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**

<table>
<thead>
<tr>
<th>Ordering code</th>
<th>Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC848890203</td>
<td>5 ft</td>
</tr>
<tr>
<td>CC848853614</td>
<td>15 ft</td>
</tr>
<tr>
<td>CC848890211</td>
<td>50 ft</td>
</tr>
<tr>
<td>CC848890228</td>
<td>150 ft</td>
</tr>
</tbody>
</table>

### J1
**Alarm Output Cable 24GA solid**

<table>
<thead>
<tr>
<th>Ordering Code</th>
<th>Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC848890153</td>
<td>5 ft</td>
</tr>
<tr>
<td>CC848865980</td>
<td>15 ft</td>
</tr>
<tr>
<td>CC848817651</td>
<td>50 ft</td>
</tr>
<tr>
<td>CC848817668</td>
<td>150 ft</td>
</tr>
</tbody>
</table>

### Pin Description Table

<table>
<thead>
<tr>
<th>Pin</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Y</td>
<td>Input: SPD Fail</td>
</tr>
<tr>
<td>2</td>
<td>S</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>O</td>
<td>Input: AUX MAJ</td>
</tr>
<tr>
<td>4</td>
<td>V</td>
<td>Input: Air Cond. Fail</td>
</tr>
<tr>
<td>5</td>
<td>W</td>
<td>Input: Door Open</td>
</tr>
<tr>
<td>6</td>
<td>BL</td>
<td>-48V</td>
</tr>
<tr>
<td>7</td>
<td>BR</td>
<td>-48V</td>
</tr>
<tr>
<td>8</td>
<td>BK</td>
<td>-48V</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Document</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>850035894</td>
<td>Galaxy Pulsar Edge Quick Start Guide</td>
</tr>
<tr>
<td>CC848815341</td>
<td>Pulsar Edge Controller Family Product Manual</td>
</tr>
<tr>
<td></td>
<td>Infinity Converter Brochure</td>
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# Change History (excludes grammar & clarifications)

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<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description of the change</th>
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<tbody>
<tr>
<td>9.0</td>
<td>12/27/2021</td>
<td>Updates as per template, removed L218 model from applicability, removed figure from step 4.</td>
</tr>
<tr>
<td>10.0</td>
<td>08/16/2023</td>
<td>Updated subtitle</td>
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<tr>
<td>10.1</td>
<td>10/27/2023</td>
<td>Updated as per OmniOn template</td>
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