

## BPS -48V 1U Integrated Shelf

**Models: J5964806L021, L021M - alpha suffixes per BPS Brochure**



**L021 Rear Output**



**L021M Mid-Mount**

No vertical spacing is required, allow a minimum 2 inch clearance at back of shelf for rectifier airflow.  
Refer to BPS 1U Integrated shelf Brochure for details and accessories.

### Tools required:

- Wire cutters and strippers
- Cable crimpers
- Torque wrench - 0-65 in-lb (0-10 Nm)
- Sockets - 5/16", 7/16, etc.
- Screwdrivers - Phillips #1 and #2, Flat small
- Wire cutters and strippers

### Step 1 - Mount Shelf

1. Reposition mounting ears as required - 1 screw each. Torque to 25 in-lb (2.8 Nm) - Phillips screwdriver.
2. Attach shelf to the frame using a minimum of four screws (two on each side) - 12-24 (provided). Torque to 35 in-lb (4 Nm) - 5/16" socket.

### Step 2 - Connect Chassis Ground and DC Reference (CO) Ground

Lug Landings: #10 double-hole on 5/8-inch center (lugs not provided).

Some applications may rely on frame mounting screws for chassis ground, omitting the chassis ground wire.

Some applications may use the Chassis Ground strap, using a single wire for both chassis ground and DC reference ground. Minimum 10 AWG wire is recommended.

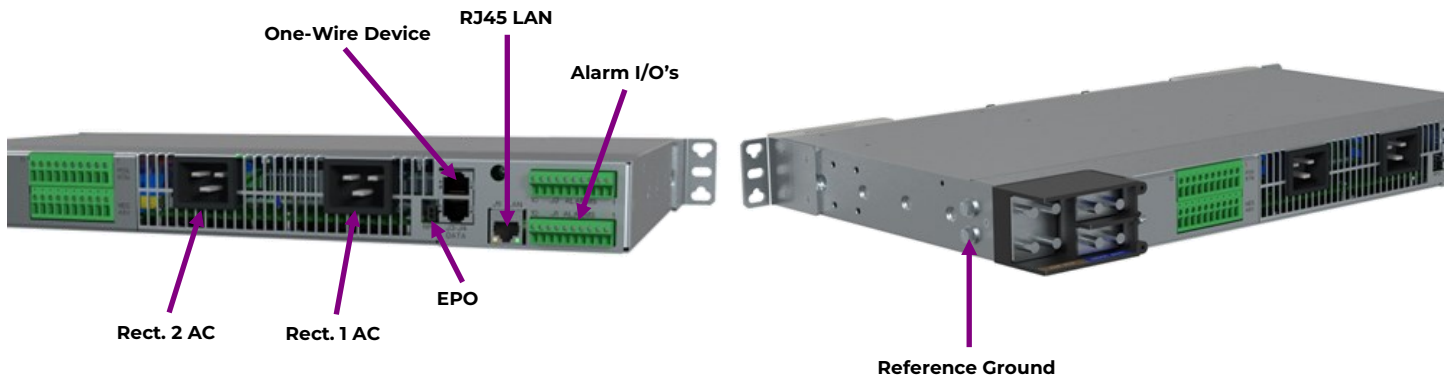
Torque 10-32 screws to 30 in-lb (3.4 Nm) - 5/16" socket.

### Step 3 - Connect AC Input

L021 and L021M shelves use C19 cords to individually feed each rectifier position. Secure cord(s) with either separate retention device or integrated retention clips.

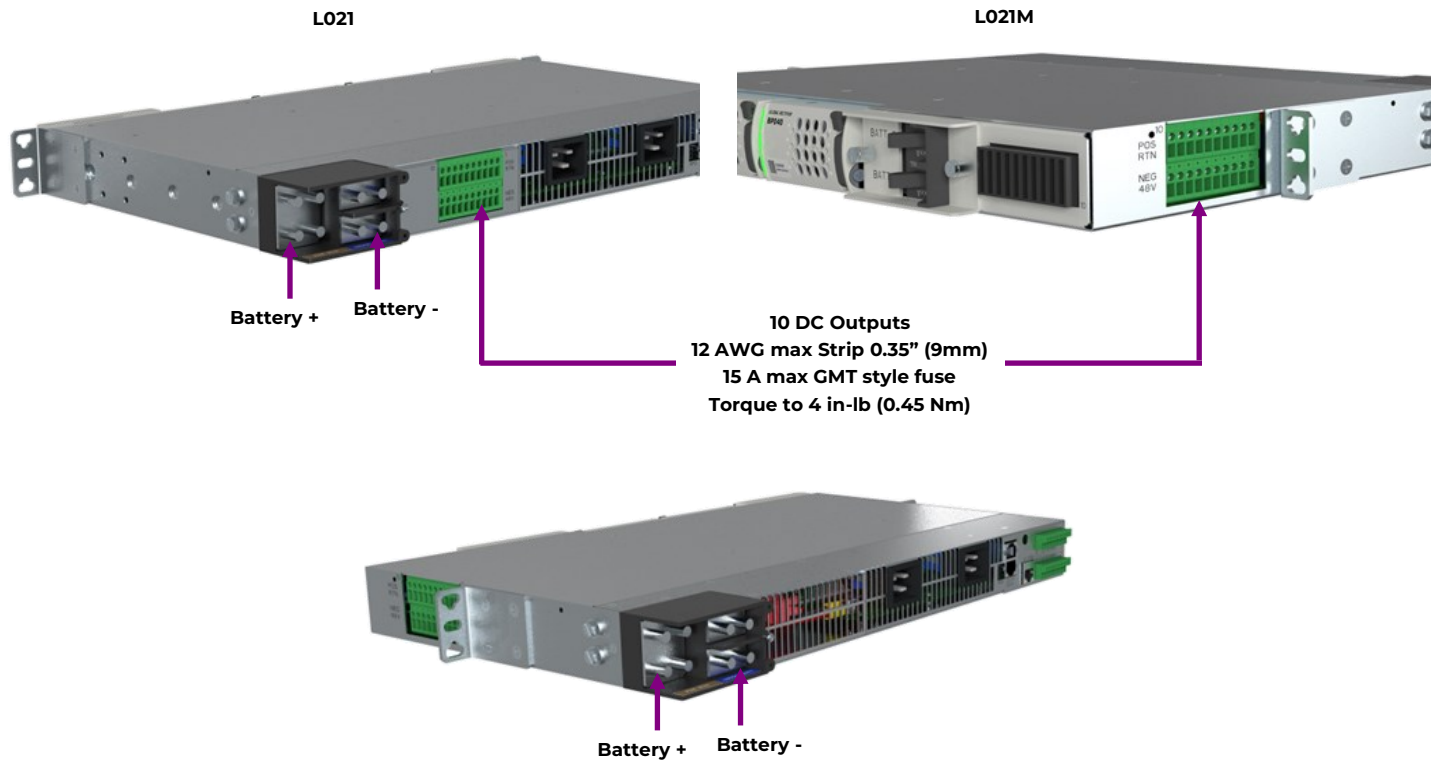
**Danger:** If blunt cut cords are used ensure AC power is OFF and use appropriate lock-out tag-out procedures before continuing with ac connections. Follow all local and national wiring rules when connecting to ac mains.

**Caution:** Route AC cables to avoid contact with sharp or rough surfaces that may damage insulation and cause a short circuit.



## Step 4 - Connect DC Output and Batteries

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



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## Step 5 - Set Jumpers - LAN Port and Relay per Galaxy Pulsar Edge

### Controller Quick Start-Guide

## Step 6 - Install Controller per Galaxy Pulsar Edge Controller

### Quick Star-Guide

## Step 7 - Install Signal and Communications Cables

Connectors are on rear.

- J1-2 Alarms and Inputs - Connect to office alarms and signals. See Information: Alarm Connections for Details.
- J5 LAN - Connect to Ethernet network.

## Step 8 - Install 1-Wire Battery Temp and Voltage Monitor per Galaxy Pulsar Edge Controller

### Quick Start Guide - Optional

Connect 1-Wire Battery Temp and Voltage Monitor to J3.

## Step 9 - Install Rectifiers

Firmly push the rectifier into the rectifier slot.

Press rectifier latch until it clicks to ensure rectifier is seated.

**NOTE:** When installing a rectifier in a powered system the RUN LED on the rectifier will blink until communication with the controller is established.



## Step 10 - Initial Start Up

Verify that all AC, DC and Alarm connections are complete and secure. Turn on AC 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: Rectifier Options

Rectifiers single phase, hot-pluggable, fan-cooled		Input		Recommended AC Breaker		Output		
		V <sub>AC</sub>	A	2 Feeds C19 Cords	1 Feed C19 Cord	Float V <sub>DC</sub>	W	A1
1600489641A	BP020AC48ATEZ	100-120	6	6A	12A	48-58	650	12
		200-240	6	6A	12A	48-58	1000	20
1600420226A	BP040AC48ATEZ, 2000W	100-120	12.5	12.5A	25A	48-58	1200	24
		200-240	10.5	10.5A	21A	48-58	1600	32

Output Current at 54.5V. Outputs are power limited, not current limited.

## Information: Alarm Connections

See the BPS 1U Integrated Shelf Brochure for details.

Alarm connections are on the rear of the shelf - J1 is Alarm Outputs and J2 is Alarm Inputs.

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

Connector	J1 - Controller Variants	J2 - AI Controllers
Controller/ Pin	0I6R_D - 5 Alarm Relays	All
1	Output: R3 = Rtn	Input: SPD Fail
2	Output: R2 = Rtn	--
3	Output: R1 = Rtn <sup>2</sup>	Input: AUX MAJ
4	Output: PMN Rtn	Input: Air Cond. Fail
5	Output: PMJ Rtn	Input: Door Open
6	Output: R3 = AC Fail (ACF)	-48V
7	Output: R2 = Rectifier Fail Alarm (RFA)	-48V
8	Output: R1 = Battery On Discharge (BD)	-48V
9	Output: PMN	Output: R4 = Fuse/Breaker Alarm (FAJ) <sup>1</sup>
10	Output: PMJ	Output: R4 = Rtn <sup>1,2</sup>

<sup>1</sup> Only with 6 relay controllers (6R)

<sup>2</sup> Returns for R1 and R4 are bridged. Other returns are isolated

## Specifications and Application

- Specifications and ordering information are in the Slimline Power System Brochure available at [omnionpower.com](http://omnionpower.com).
- External Surge Protective Devices (SPDs) - are required on all AC inputs.  
Equipment Safety is Approved in IEC 60664-1 Installation Category II environments.
- 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](http://omnionpower.com).

Document	Title
850035894	Galaxy Pulsar Edge Quick Start Guide
CC848815341	Pulsar Edge Controller Family Product Manual
	BPS 1U Integrated Shelf Brochure

## Safety Statements

- Do not install this equipment over combustible surfaces.
- Rules and Regulations - Follow all national and local rules and regulations when making field connections.
- Compression Connectors
  - U. S. or Canada installations - use Listed/Certified compression connectors to terminate Listed/Certified field-wire conductors.
  - All installations - apply the appropriate connector to the correct size conductor as specified by the connector manufacturer, using only the connector manufacturer's recommended or approved tooling for that connector.
- Electrical Connection Securing: Torque to the values specified on labels or in the product documentation.
- Cable Dress - dress to avoid damage to the conductors and undue stress on the connectors.
- Circuit Breakers and Fuses
  - Use only those specified in the equipment ordering guide.
  - Size as required by the National Electric Code (NEC) and/or local codes.

Safety Tested Limits - Refer to the equipment ratings to assure current does not exceed:

  - Continuous Load (List 1) - 60% of protector rating.
  - Maximum Load (List 2 - typically end of discharge) - 80% of protector rating.
- GMT Style Fuses - Use only fuses provided with safety caps.
- Field-wired Conductors - Follow all National Electric Code (NEC) and local rules and regulations.
  - Insulation rating: 90°C minimum; 105°C (minimum) if internal to enclosed equipment cabinets.
  - Size AC field-wired conductors with 75°C ampacity (NEC) equal to or greater than their panel board circuit breaker rating.
- AC and DC input disconnect/protection - Provide accessible devices to remove input power in an emergency.
- Alarm Signals - Provide external current limiting protection. Rating 60V, 0.5A unless otherwise noted.
- Grounding - Connect the equipment chassis directly to ground. In enclosed equipment cabinets connect to the cabinet AC service ground bus. In huts, vaults, and central offices connect to the system bonding network.

## Precautions

- Install, service, and operate equipment only by professional, skilled and qualified personnel who have the necessary knowledge and practical experience with electrical equipment and who understand the hazards that can arise when working on this type of equipment.
- Disconnect batteries from outputs and/or follow safety procedures while working on equipment. Batteries may be connected in parallel with the output of the rectifiers. Turning off the rectifiers will not necessarily remove power from the bus.
- Do not disconnect permanent bonding connections unless all power inputs are disconnected.
- Verify that equipment is properly safety earth grounded before connecting power. High leakage currents may be possible.
- Exercise care and follow all safety warnings and practices when servicing this equipment. Hazardous energy and voltages are present in the unit and on the interface cables that can shock or cause serious injury. When equipped with ringer modules, hazardous voltages will be present on the ringer output connectors.
- Use the following precautions in addition to proper job training and safety procedures:
  - Use only properly insulated tools.
  - Remove all metallic objects (key chains, glasses, rings, watches, or other jewelry).
  - Follow Lock Out Tag Out (LOTO) procedures: customer specified, site specific, or general as appropriate. Disconnect all power input before servicing the equipment. Check for multiple power inputs.
  - Wear safety glasses.
  - Follow Personal Protective Equipment requirements: customer specified, site specific, or general as appropriate.
  - Test circuits before touching.
  - Be aware of potential hazards before servicing equipment.
  - Identify exposed hazardous electrical potentials on connectors, wiring, etc.
  - Avoid contacting circuits when removing or replacing covers;
  - Use a personal ESD strap when accessing or removing electronic components.
- Personnel with electronic medical devices need to be aware that proximity to DC power and distribution systems, including batteries and cables, typically found in telecommunications utility rooms, can affect medical electronic devices, such as pacemakers. Effects decrease with distance.

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