

CPS6000 Power System

Models:

19" Shelf, Rear AC, 3 Slot, CC109170981, 150024098

23" Shelf, Rear AC, 4 Slot, CC109170998



This CPS6000 model is available in a 19" or 23" shelf. Install the shelf with a minimum gap of 3/4 inch above and below to allow proper airflow. Attach the CPS shelf to the frame using a minimum of four (two on each side) of the 12-24 screws included with the shelf

Tools required:

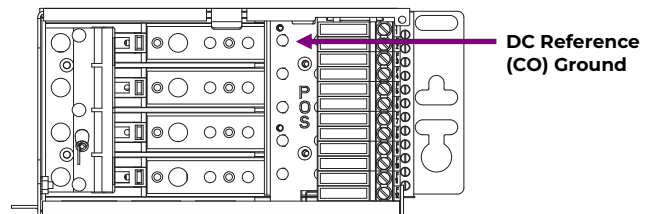
Cable crimpers
Heat shrink gun
Torque wrench (0-240 in-lb / 28 Nm)

Digital meter, +/- 0.02%
Screw Drivers (#1 and #2 Phillips)

5/16" and 3/8" nut drivers and sockets
Wire cutters and strippers

Step # 1 - Connect DC Reference (CO) Ground

Use a #10 double-hole lug on 5/8-inch center (Not provided) for the DC Reference (CO) ground as shown in the figure below. Torque connections to 37 in-lbs. Minimum 8 gage wire is recommended.

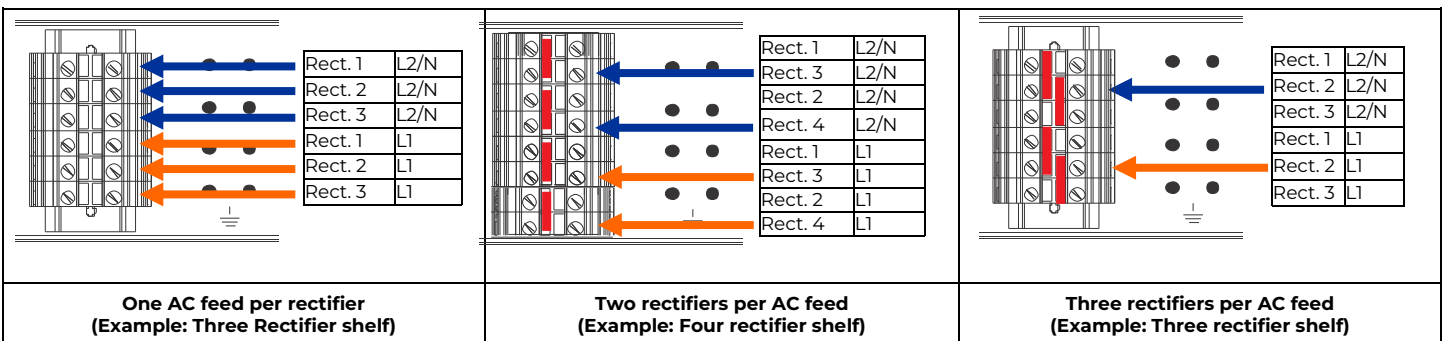


Step # 2 - Connect AC Inputs

AC inputs terminate on the rear of the shelf. The AC feeds may be 110VAC or 208/220VAC depending on the rectifier used. Inputs can feed one, two or three rectifiers, jumpers are provided. See diagram below.

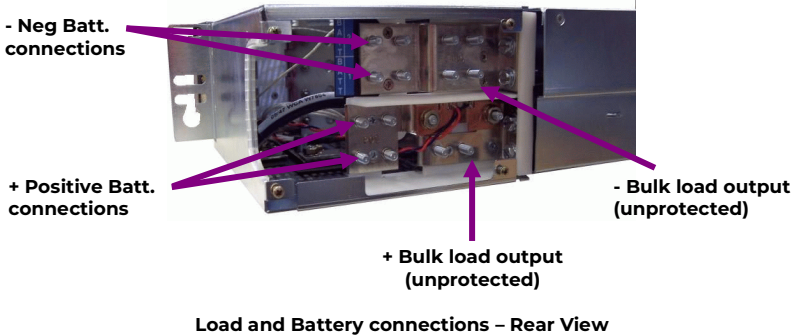
Warning: Ensure AC power is OFF and use appropriate lock-out tag-out procedures before continuing with ac connections.

Warning: When connecting to utility source, ensure all local and national wiring rules are being complied with.

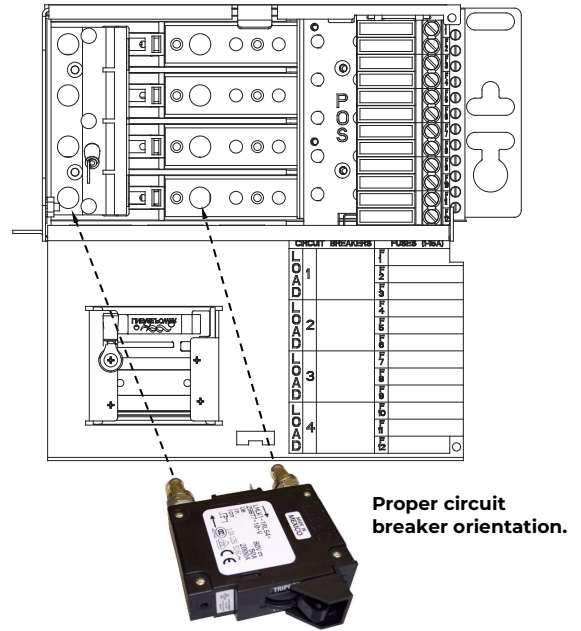


Step # 3 - Connect DC Outputs and Batteries

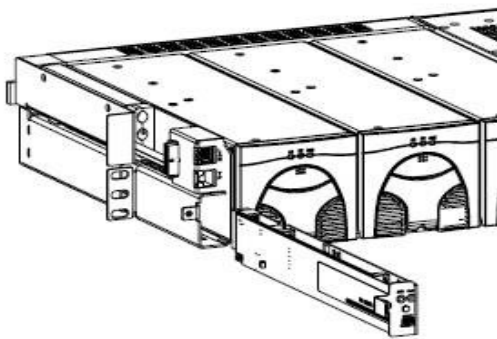
The figure to the right shows the DC output section. There are twelve GMT fuses and four load circuit breakers. GMT fuse connections are made to lug-less terminal blocks. The maximum wire size for fuse connections is 10 AWG. Circuit breaker connections are made with double hole lugs on #10-32 studs on 5/8" centers. The maximum tongue width for breaker connections is 0.68". An extra return connection is available for the DC reference ground shown previously. Identify all circuit breaker and fuse loads on the label located on the inside of the distribution section door. The figure below shows the two battery string connections located on the rear of the shelf. Battery connections are made with double hole lugs on #10-32 studs on 5/8" centers.



Fuses and Circuit Breakers – Front View



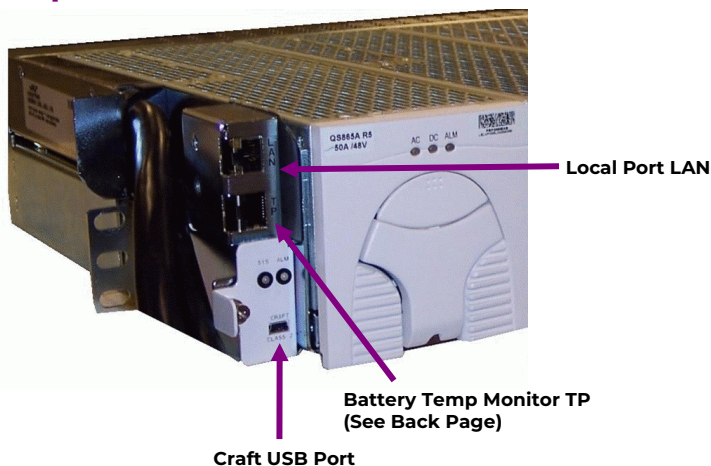
Step # 4 - Controller installation



The Pulsar Edge Controller (QS841E_016R_USB_CS1) installs in the controller slot on the left side of the system as shown. Tighten the thumb screw to secure the controller. The QS841E_016R_USB_CS1 controller is a custom configured controller for this specific application. Always use this controller in this application.

Warning: Properly protect the controller against ESD discharge. Note: There is an ESD cord connection located on the left side of the shelf.

Step # 5 - Controller Connections

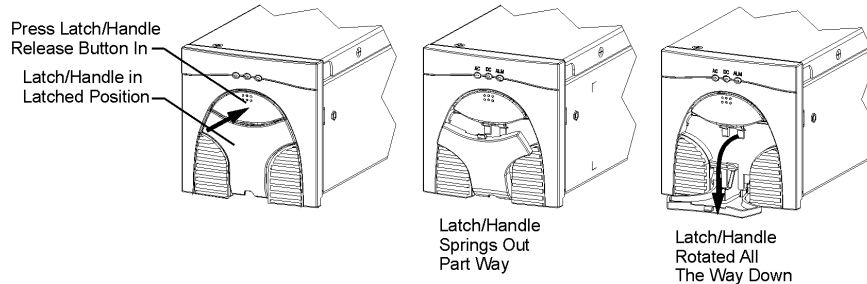


The CPS6000 cable interfaces are fixed to the shelf, allowing the controller board to be removed without disconnecting cables. The Local USB (Craft) Port cable connects directly to the controller board. Local Area Network, LAN, and Battery Monitoring connections are shown on the diagram to the left. The LAN connection can also be used as a Craft Port when configured as a Server.

Office Alarm connections and Battery Temp Monitoring details are shown on the last page of this guide.

Step # 6 - Rectifier Installation

Remove the rectifier from the packing material and unlatch the handle as shown. Firmly push the rectifier into the rectifier slot until the connector on the rear engages with the shelf. The latch will pop most of the way up when the rectifier is properly seated. Push the latch up into the latched position to complete engagement.



Step # 7 - Initial Start Up

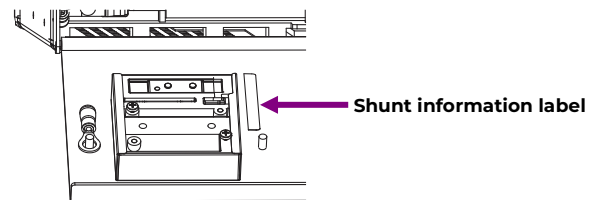
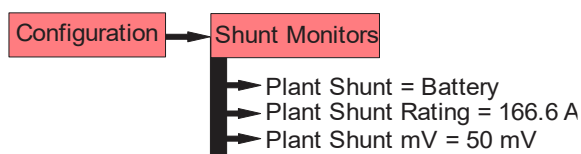
Verify that all AC, DC and Alarm connections are complete and secure. Once this is complete, the AC input breakers may be turned on. If rectifiers have not yet been installed, install rectifiers now as described previously. As each rectifier is installed, the controller automatically identifies the new rectifier and begins communication. If there are no alarms, make required adjustments to the default settings on the controller for this installation. Refer to the controller sections in CPS6000 Manual (CC848879015) for more information on web pages, craft port and configuration changes. Most functions in software are intuitive by referring to the menu map listed in the detailed controller product manual.

Step # 8 - Minimum controller setup

Minimum controller configuration (Using the front display);

The system shunt settings MUST be configured for proper operation. Other default settings, e.g., float voltage and alarm thresholds are configured at the factory with industry standard values. Some applications may require minor adjustments to factory settings.

Open the door on the distribution section and look to the right of the controller for a label indicating the installed shunt information. If there is NOT a label configure the system shunt to 166 Amps and 50mV. See example below. If a label is present configure the shunt to the values on the label.

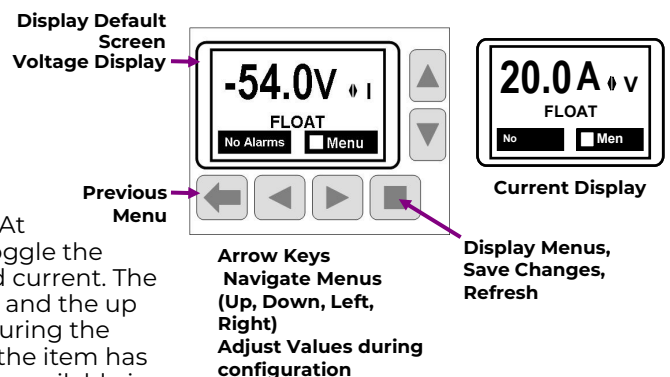


Information: Controller Basic Operation

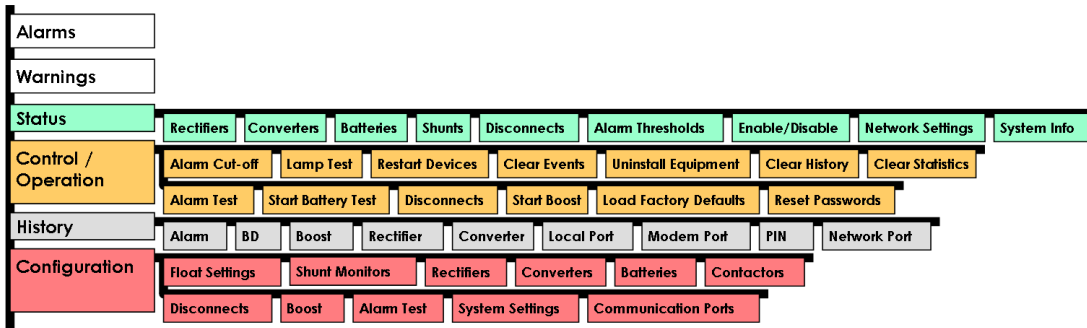
The backlight of the four-line LCD display changes color to reflect the system alarm status as follows:

- Green Normal
- Amber Minor Alarms Present
- Red Major Alarms Active

The up and down arrow keys can be used to adjust screen contrast when the controller is displaying the default screen. At the default menu, the left and right arrows are also used to toggle the display from displaying the system voltage or the system load current. The left and right arrow keys are also used to navigate the menus and the up and down arrow keys are used to change values when configuring the system. A black box highlighting a menu item indicates that the item has sub-menus. Full configuration details and Menu structure are available in the Product Manual.

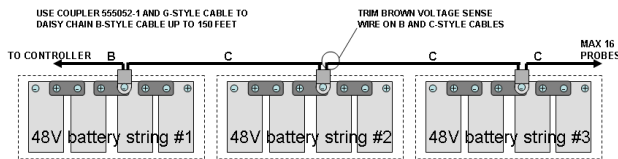


Information: Controller Menu

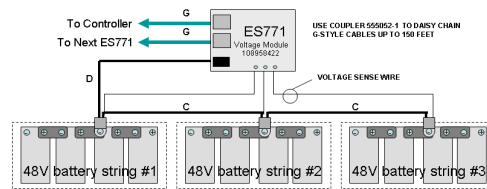


Information: 1-Wire Battery Temp and Voltage Monitor

Battery Monitoring is accomplished with a “Daisy Chained” series of probes connected to J3. The Probes are used to monitor battery temperature and voltage (ES771 required to monitor voltage). Bolt the Probe under the “-” terminal connector hardware; NOT under the connecting Lug.



Temperature Measurement



Temperature and Voltage Measurement

Ordering Codes	Descriptions
CC109142980	QS873A Thermal Probe
CC848817024	B: 10' controller to thermal probe wireset
CC109157434	B: 20' controller to thermal probe wireset
CC848822560	C: 1' thermal probe to thermal probe wireset
848719803	C: 5' thermal probe to thermal probe wireset
CC848822321	C: 10' thermal probe to thermal probe wireset

Ordering Codes	Descriptions
108958422	ES771A Voltage Monitor Card
CC848791517	D: 2 1/2' ES771A to probe wireset
CC848797290	D: 6' ES771A to probe wireset
848719829	D: 10' ES771A to probe wireset
CC848791500	G: 4' ES771A to ES771A or controller wireset
848652947	G: 10' ES771A to ES771A or controller wireset

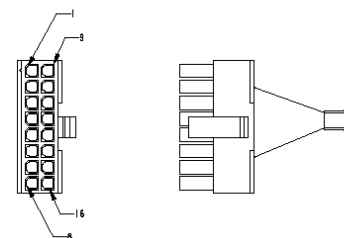
Information: Office Alarm Connections

Office alarm connector (J1) is located on the rear of the shelf, it provides access to the alarm relay inputs and outputs. Note the wire color and alarm descriptions in the table below.

J1 Office Alarm Connector



Pos	Color	Signal	Factory Default
1	BLK	User Configurable Alarm Input	Door Open
2	W	User Configurable Alarm Input	AMJ (Aux Major)
3	R/BLK	PTC Protected VBUS-/ABS	VBUS- (For Alarms)
4	OR	Power Major Relay Return	PMJ Return
5	OR/BLK	Power Minor Relay Return	PMN Return
6	R/WHT	Relay 1 Return	BD Return
7	WHT/BLK	Relay 2 Return	Rectifier Fail (RFA) Return
8	BL/R	Relay 3 and Relay 4 Return	FA & ACF Return R3 & R4
9	R	User Configurable Alarm Input	SPD Fail
10	GR	User Configurable Alarm Input	Air Conditioner Fail
11	BL	Relay 4	Fuse Alarm (FA)
12	GR/BK	Power Major Relay	PMJ (Power Major)
13	BL/BK	Power Minor Relay	PMN (Power Minor)
14	GR/WHT	Relay 1	Battery on Discharge (BD)
15	WHT/R	Relay 2	Rectifier Fail (RFA)
16	OR/R	Relay 3	AC Fail (ACF)



Change History (excludes grammar & clarifications)

Revision	Date	Description of the change
1.0	02/14/2024	Updated as per OmniOn template

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