



DyoCore™

Setup / Testing SolAir Rectifier

6.9.10 rev dr2

The SolAir Rectifier converts the AC motor power to DC and then provides both the Solar and Wind power DC output. Based on your motor version combined output is:

1. Original DyoCore Motor – post March 2010. In passive light: up to 150v / approximately 12 amps max.
2. New DyoCore 130 motor. In passive light: up to 300v / approximately 8 amps max.

Rectifier boxes are NEMA and include punch out holes with wire tight connections. On the site you should use lock tight weather tight connections to assure the NEMA rating.

The rectifier should be attached to the SolAir frame shaft or near the SolAir unit to allow for enough room to connect the wire that runs from the bottom of the SolAir unit. See image 1. The motor is grounded to the frame and once the rectifier is attached to the frame it is also grounded. The Rectifier has a grounding bolt on the surface plate inside the box. This provides an isolated ground and should remain isolated to your final grounding point either on your grounded conduit or directly to your fuse box grounding panel.



Image 1 – Rectifier installed on Frame Shaft

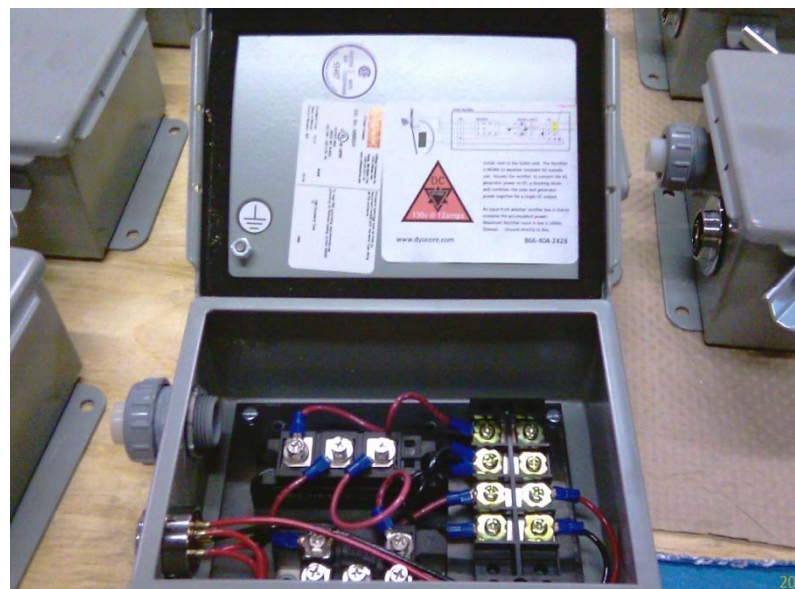


Once installed and connected to the SolAir via the 5 pin connector – Test the voltage;

1. Verify the Solar + / - voltage terminals. (Image 2). Verify that you are getting positive and negative current up to approximately 30v in passive light. In the picture below (image 4) the posts are reversed and need to be changed. This often occurs when utilizing an post March 2010 frame assembly with the new rectifiers. To fix this simply switch over the two posts and then retest.



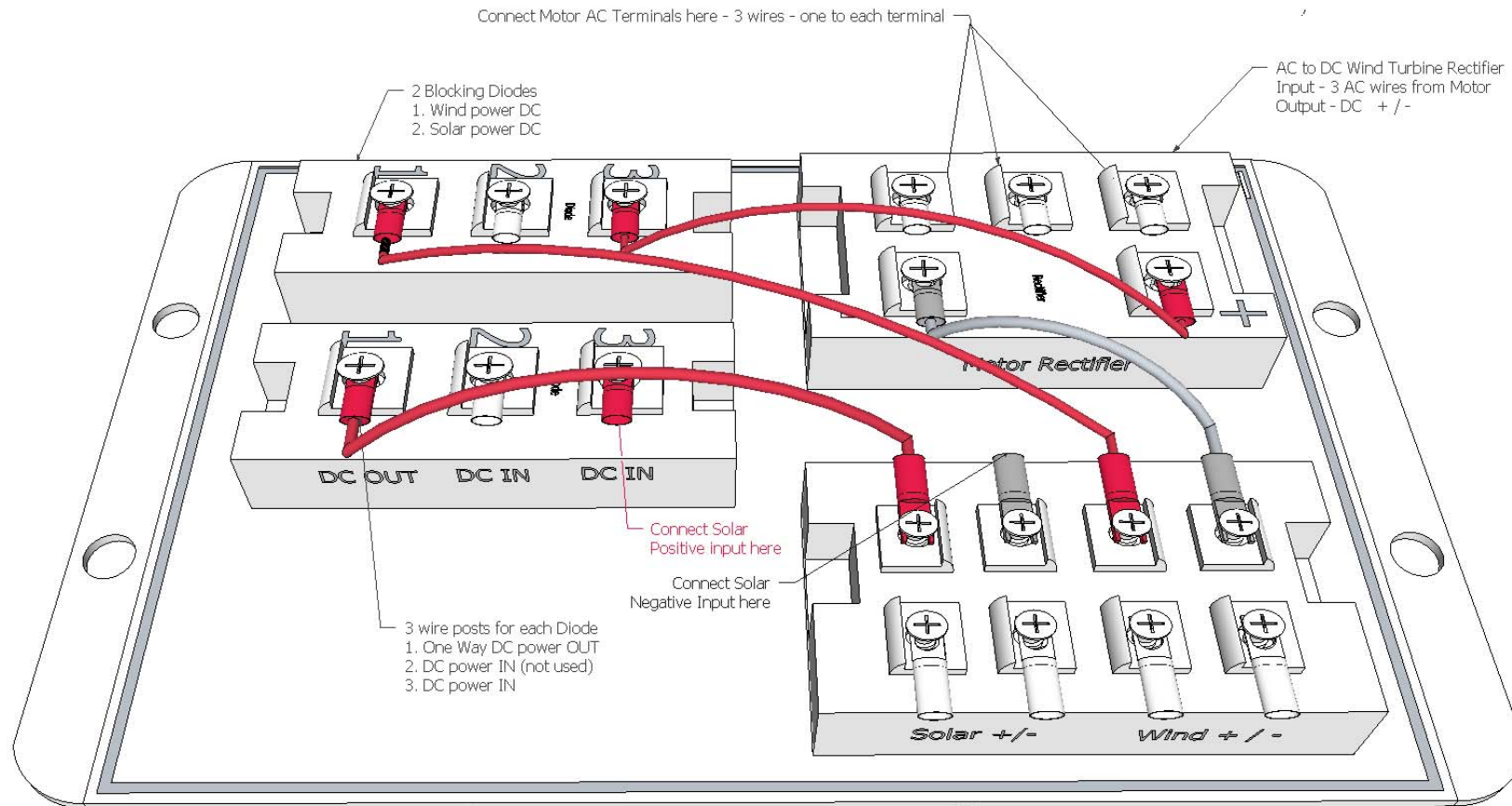
Image 2 – Testing the connections



New Rectifier with single blocking diode

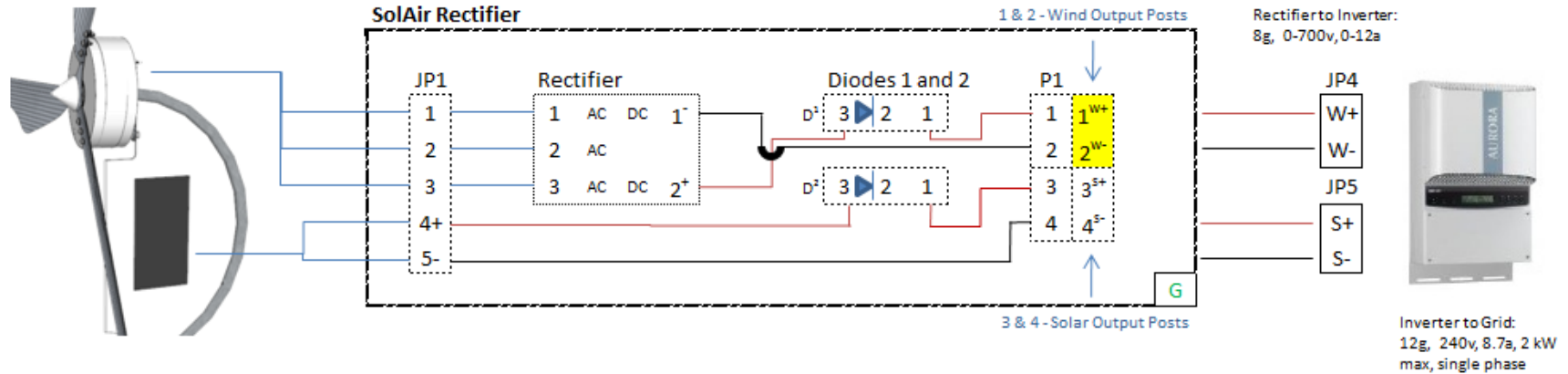
2. **TEST ALL POSTS.** Test all posts for the correct configuration of the positive and negative runs. In the picture above (image 1) the black represents Positive, the Red represents Negative. You should manually verify all connections for the appropriate power configuration. Negative voltage would indicate an incorrect wiring configuration. You should get the exact same voltage (less a hundredth or two) as you run your wire between rectifier boxes.
3. Hand spin the blades while testing the top two posts, with a good spin you should see a rise in voltage. You should NOT see a drop in voltage. If you see a drop you have a wiring problem and should retrace your wiring and/or contact DyoCore.

Rectifier Components





Rectifier wiring configuration with Aurora Inverter



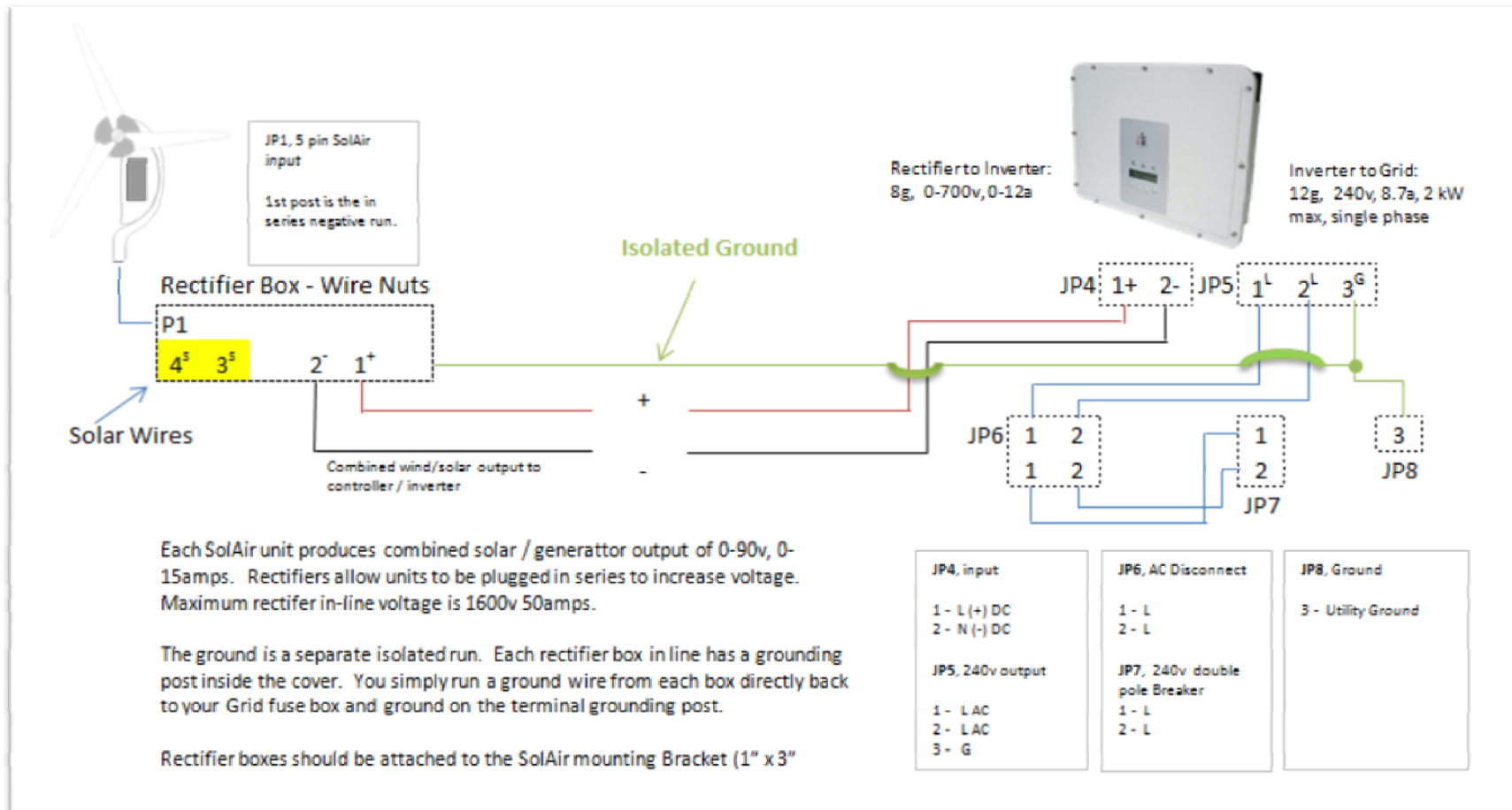
<p>SolAir Output</p> <p>Generator 3 Phase star connected AC output 0 - 60v AC, 0-15amps</p> <p>Solar wired in series 0-15.4v each panel, 0-1.25 amps</p>	<p>JP1, SolAir 5 Wire</p> <p>1 - wind AC 2 - wind AC 3 - wind AC 4 - solar + 5 - solar -</p> <p>Verify all connections with a DC</p>	<p>SolAir Rectifier is approx. 8" x 3" x 1.5". Unit is installed next to the SolAir unit. The Rectifier is NEMA weather resistant for outside use. The unit houses the rectifier to convert the AC generator power to DC, a blocking diode, both Solar and Wind power are DC output.</p> <p>An input from another rectifier box in line to combine the accumulated power. Maximum Rectifier input in line is 1600v, 50amps.</p>	<p>P1, Wire Posts</p> <p>1 - (+) Wind Output 2 - (-) Wind Output</p> <p>3 - (+) Solar Output 4 - (-) Solar Output</p> <p>G: Connect Ground wire to surface plate bolt.</p>	<p>JP4, Wind input</p> <p>1 - W (+) DC 2 - W (-) DC</p> <p>JP5, Solar input</p> <p>1 - W (+) DC 2 - W (-) DC</p>	<p>See Aurora Setup for Grid connect and system settings.</p> <p>240 Grid Connect - See manual for connection details</p>
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Between Rectifiers and the Grid it is recommended you use 8 gage wire for Turbine run and 12 gage wire for your solar run.

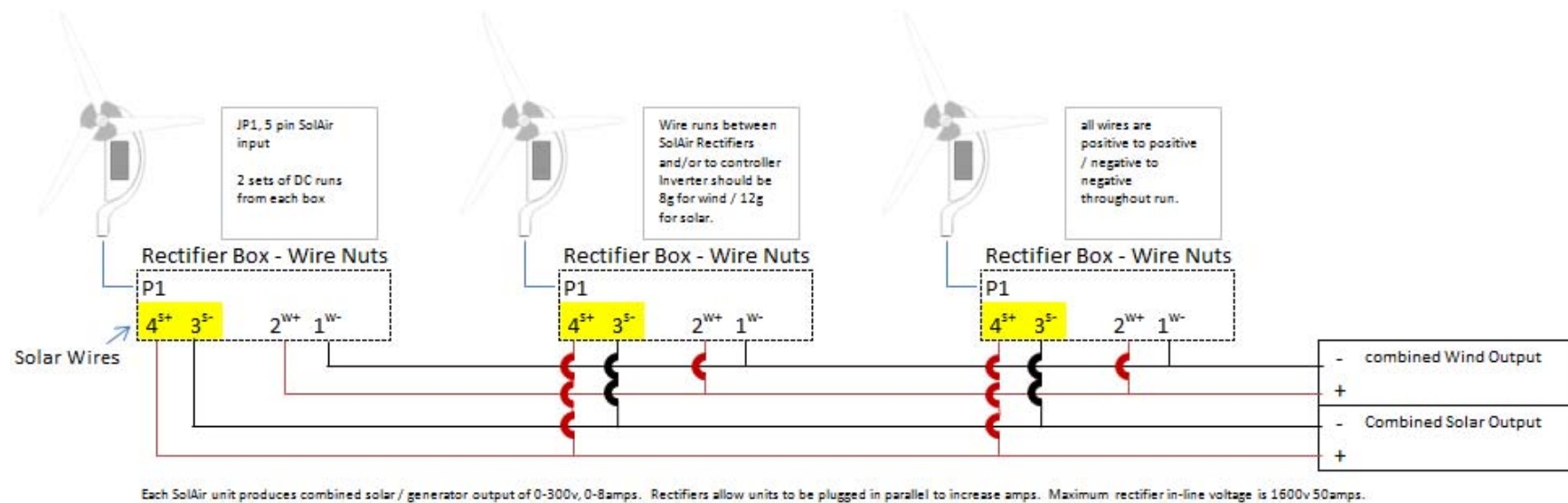
NOTE*** VERIFY ALL POSITIVE AND NEGATIVE CONNECTIONS FROM EACH POST. *******



Single unit install - Ginlong



Multiple Unit install



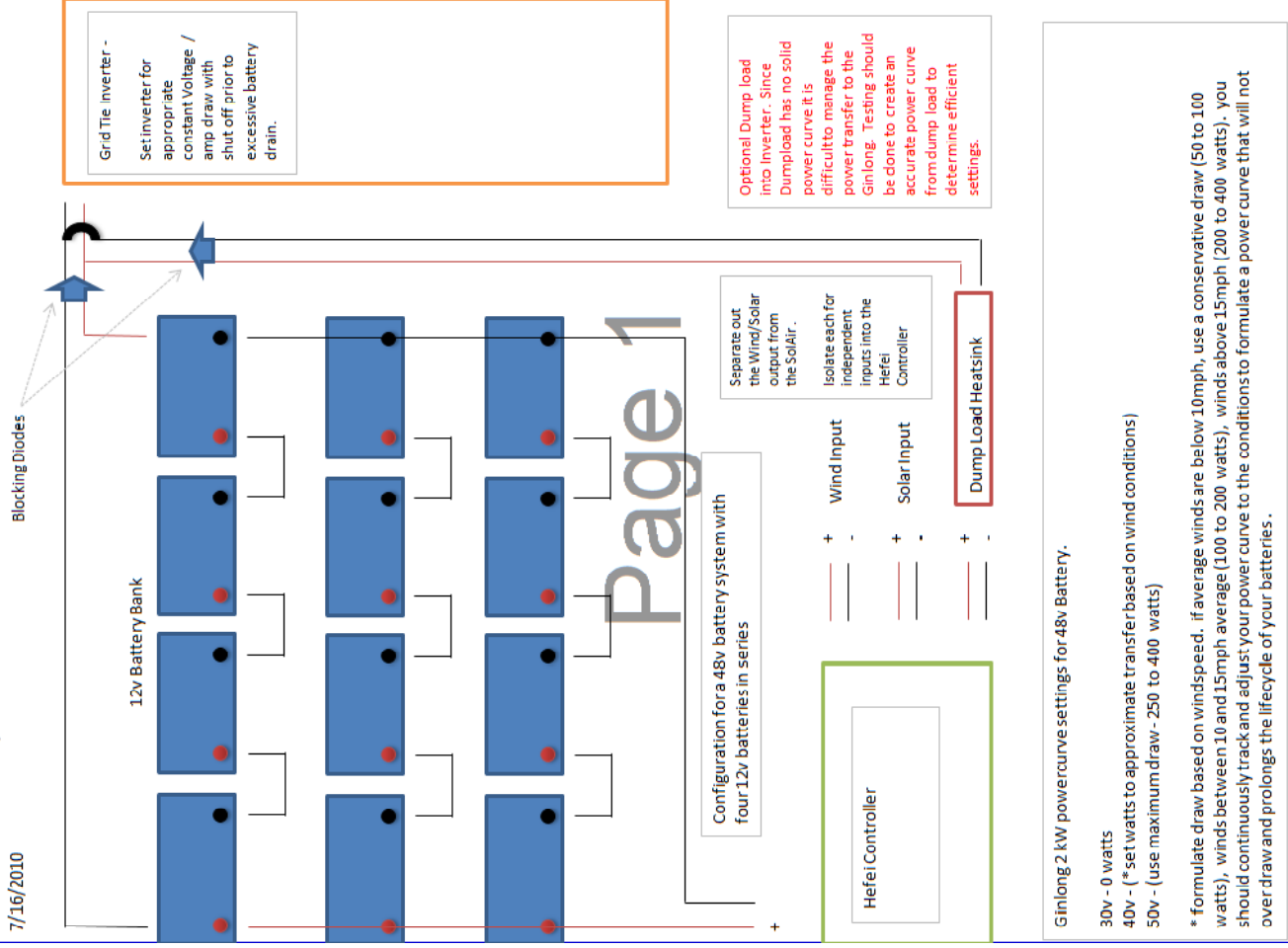
Connect positive to positive / negative to negative throughout wiring run.

- 8 gage wire between Wind power runs
 - Up to 300v @ 8 amps peak (250volts)
- 12 gage wire between Solar power runs
 - Up to 38v at .7 amps

Controller setup – multiple batteries in series



Controller / Inverter Setup Overview
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