Plasmatronic Regulator Relay

Increasing the Charging Capability of Your Plasmatronics PL Regulator

Adding a 40A Relay to a PL Regulator

Solar Array Negative

Battery Negative

Regulator (PL18, PL40 or PL80)

275 Ah
IN
BOOST

PL20 SOLAR CONTROLLER
12.48V 20A CHARGE

BAT+ SOL- BAT- LOAD-
BAT+ SOL- BAT- LOAD-

Solid State Relay

Output
1   2

4   3
Input
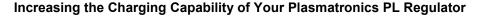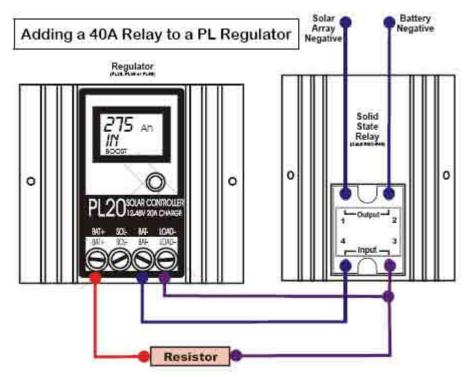
Resistor

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This configuration is used to handle currents higher than your existing regulator's maximum rating without having to replace your regulator with a larger one. It is also used to increase the capability of large systems already equipped with the PL60. Extra strings of panels (up to 40 amps per relay) are connected to the battery bank as follows:

The battery negative wire is connected to terminal '2+' on the relay, and terminal '1' is connected to the extra solar array negative (assuming the initial solar array is being regulated directly by the PL regulator). The normal operation of the regulator is thus duplicated at the relay.

The regulator program settings and the value of the resistor are as follows: (Regulator is set to REG: 4, LSET: 10, PWM: 3) (Resistor values are; 220. for 12v, 440. for 24v etc.)

Note: If you wish the regulator to measure the current going through the relay, then a Plasmatronics shunt adapter and external shunt will be required.

Part used in example above = Crydom D1D40 SS relay (needs large heatsink, 80W @ 40amps!).

12V systems can use a lower cost Jaycar relay = SY4086 (needs a lot smaller heatsink).

Also Note: Extra connected solar arrays will need reverse blocking diodes (unless the solid state relay used is a reverse blocking design) and a 'catch' protection diode should be placed across the output of the Solid State Relay (band of catch diode to the Battery Negative side).

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http://www.rpc.com.au/reindex.html?http://www.rpc.com.au/products/regulators/plasmatronics/plasmatronics.html