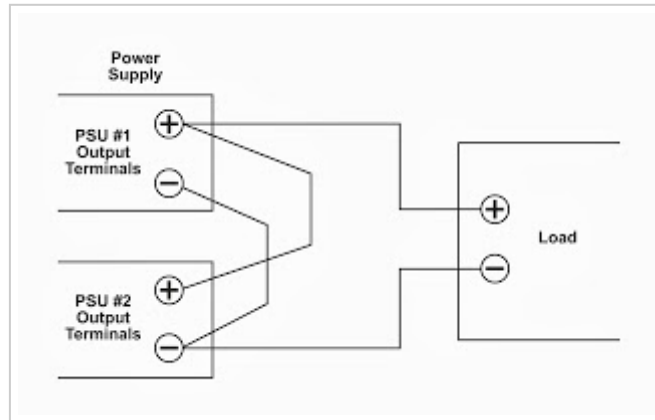


Monday, September 23, 2013

## "Brute Force" Parallel of Power Supplies

You will see in many of our instruction manuals a warning about not connecting power supplies in parallel that do not have current share capabilities.

At first it would seem a nice easy way to get extra current. Take two like power supplies, connect them together and they will deliver twice the current?



Unfortunately there is a good chance that the two power supplies will not current share due to their output voltage set points. The power supply with the highest output voltage setting will deliver as much current as it can until it reaches its current limit threshold and then the output voltage starts to drop. The second power supply will then take over and provide the balance. The output voltage might glitch during the transition, affecting system operation.

For example, take two 24V 10A power supplies with an over current set point of 120% powering a 15A load:

Power supply A might deliver 12A (now at its current limit point)

Power supply B would then deliver 3A.

One could argue that the power supply is being protected by the current limit. There are two issues with this though:

1. A power supply is not designed to operate in current limit indefinitely. Internal temperatures will rise, reducing the life of the product
2. The safety certifications for UL, CSA are based on 100% load, not 120%

My recommendation is to use a power supply with a higher current rating, or choose one with a current share feature.

Posted by [Power Guy](#)