

Re: Efficiency of Sola Constant Voltage Transformer?

Source: <http://sci.tech-archive.net/Archive/sci.electronics.repair/2005-08/msg00289.html>

- *From:* "Mark & Mary Ann Weiss" <mweissX294@xxxxxxxxxxxxxxx>
 - *Date:* Tue, 02 Aug 2005 18:35:42 GMT
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"Bennett Price" <bjpriceNOSPAM@xxxxxxxxxxxxxxx> wrote in message news:42EF9BB4.4090701@xxxxxxxxxxxxxxx

> I'd be a little cautious about this. The nature of the load the xformer
> is driving will effect how the xformer performs. I'd ask APC (and/or
> check their FAQs) whether CVS might be a problem. I had a fluorescent
> desk light that would not start when connected to a CVS – not the same
> thing as a UPS but

My biggest concern is becoming one of whether this will vastly increase our electric consumption. I read some documentation that suggests that a 2kVa CVS will pull 1kVa at no load! They are most efficient at 100% load. So even though this would be going in front of a 2.2kVa UPS, our load is about 10 amperes on that branch, so I chose to get a 1kVa Sola 23-25-210 model, used, for \$45, with the intent of loading it fully to maximize efficiency. Another thing mentioned in the docs is heat. They are designed to run so that the core is too hot to touch! That means more a/c load to cool the room. Lots of things to consider.

But the used CVS is cheap enough so that if it doesn't give the results we want, we haven't lost \$1700 that a new one would have cost.

I'm very surprised that a desk lamp would not start. It must have had a high inrush current. That IS a concern with the Sola, as they fold back, and one PC power supply alone has a 80 ampere inrush current. Hopefully the CVS can handle that short spike before the field collapses and recover transparently. We'll see. The concern is more one of switching loads. But it may not be sensible to shut off unused PCs on the network once the CVS is installed, since the line current will be pretty much constant regardless of load on the CVS.

Alternatively, we just modify all PC power supplies by adding a humungous DC input cap after the bridge rectifier, to increase the holdout time long enough so that we can use the "less" sensitive setting on the APC UPS, which slows down switching from line to UPS. Several pieces of equipment need modifying in this manner. A few seem to be okay with the momentary interruption in power as the UPS switches to online mode. Ultimately it will be an experiment.

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Best Regards,

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 - **References:**
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◇ From: NSM
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