

## Re: damaging circuits with ????

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- *From:* "Androcles" <[Headmaster@xxxxxxxxxxxxxxxxx](mailto:Headmaster@xxxxxxxxxxxxxxxxx)>
  - *Date:* Thu, 20 Nov 2008 01:51:29 -0000
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<westom1@xxxxxxxx> wrote in message

[news:b4e85fdb-c1d1-4d19-b4cd-d7a028016a28@xx](mailto:news:b4e85fdb-c1d1-4d19-b4cd-d7a028016a28@xx)

You have described what is often called an open neutral. IOW, while he was in the electric box, he also tightened screws holding wires. Problem solved. Voltage changes were not solved by a 'power conditioner' – which is not what he installed.

You have told yourself (assumed) that power supplies previously were more robust – when reality is the reverse. Today's computer power supplies must be so robust that even dirtiest output from computer grade UPSes do not cause damage. So robust that even startup (a more challenging operation) occurs without problems. Computer power supplies today must be so robust that voltage variation during normal operation, or during startup which is more difficult; neither is adversely affected by voltage variation.

Now, before responding, review ATX power supply specs. Power supplies must even withstand a thousand volts without harm. Before jumping to conclusions, read industry standards or specifications to appreciate what that number says.

AC mains voltage must drop so low that an incandescent bulb is at 40% intensity – and all computers must both start and work just fine. Industry standards that have existed for decades. Numbers that so many never bother to learn when 'assuming' computers are easily damaged. Industry standard numbers for electronics even 30 years ago said electronics must work just fine even when lamps are at only 50% intensity. But again, I am not just making a statement. One who even designed this stuff has also provided numbers AND directs you to read those numbers before knowing anything.

That 'whole house' protector is a strongly recommended item for all homes – a very good and inexpensive item to have installed. Effective if properly installed. But that 'whole house' protector did not correct (what sounds like) an open neutral problem. That problem is solved (for example) by retightening screws. That problem is but another reason why building earthing is so critical to protect human life.

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Vague -- earthing a building makes an open neutral hazardous because now an arc can leap from either line or neutral to expose metalwork. Contrary to popular belief the greatest danger to human life from electrical causes is not electrocution (which is usually merely unpleasant) but fire resulting from faulty connections or poor insulation. Across the pond, neutral and ground (earth) are the same, the step-down transformer is often on a pole with grounding connected directly to the consumer, unlike the UK standard. The operating voltages differ too, with lower voltages but higher currents in the USA.  
US: <http://aaenvironment.com/Electricity/TransformerOnUtilityPole.jpg>  
UK: <http://tinyurl.com/6rc6wo>

For more detail see  
[http://en.wikipedia.org/wiki/Earthing\\_system](http://en.wikipedia.org/wiki/Earthing_system)

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Nobody wants AC voltage to vary more than 10% constantly. Variation means a slowly failing part will get worse. Harmful failures occur later. Current voltage changes do not adversely affect industry standard computers. Solution is not to install protection from something that is not destructive. Solution is to correct the reason for voltage variation before those variations become harmful -- and then start causing even premature light bulb failures.

On Nov 19, 8:03 am, jmfahciv <jmfahciv@aol> wrote:

west...@xxxxxxxxxx wrote:  
I didn't want my computer power supplies to have a variation of +/-15 volts twice a minute. They were not built for that kind of abuse (this was in olden days when one computer was iron boxes that would fill a gymnasium). The peripherals and TTYs were spec'ed to be used in industrial-strength environments and not the poofy power environment of a household.

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I'm not talking about startup. I'm talking about the cycling when using the device. At some point, it will not cycle up because it's been "worn out" by the AC.

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I wasn't the one who was confused. :-) I did write that the electrician called it a power conditioner. He got the term (I think) from the guy who sold him the widget. It worked so well, that this guy put one in his house.

I did notice that, when the power was going to shut down, the lights no longer grew really, really bright just before the

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power went off. that kind of surge can also wreak havoc  
with electronics.