

Re: Protecting an Xp laptop from power surge/spike in a motorhome.

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- *From:* "Poprivet" <poprivet@xxxxxxxxxxxxxxxxxxxxxxxx>
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Spikey wrote:

The motorhome has a "smart" electric system which supplies 12v and 240 mains to various outlets from an external source (mains). I'm assuming its more at risk of spikes or surges but for the life of me I cant find any info even with the boating fraternity who usually have a similar set up. I dont normally bother but we are going to be full timing it for a while and so the laptop contents are more critical.

So will the normal surge connector I use at home be sufficient to protect it or do I need something else/different?

No, it won't. You really should invest in a good UPS (Uninterruptable Power Supply) and it should include Line Conditioning. They aren't real expensive and APC makes the ones I use here at home.

And if the power is supplied by generator does that make any difference? Or with an inverter?

YES! W/r to operating the computer: It makes a definite difference! Unless you know that the generator is guaranteed to duplicate the specs of the power grid, you want to watch out.

Most generators don't put out a perfectly sinusoidal power wave. Inverters in particular often put out a square wave which is capacitively filtered and only approximates the needed sine wave; and not very inefficiently I might add.

Either is subject to power surges, momentary over/under voltages due to load changes, external induction and normal operations. These are the important things a UPS will do for you. A UPS with line conditioning will also keep the waveform within specs and definitely will prolong the life of the computer. For a laptop you're only looking at about \$150 for a good UPS. Check the laptop; if it uses, say, 80W, then a 150W UPS will suffice of even a 100W but not nearly as reliably, especially if you add any

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peripherals to it.

As for charging batteries, FINE: No problem. Battery chargers will work fine on those instruments.

I'm assuming with 2 full batteries in the laptop I don't need UPS?

You still need a UPS if you want to plug the laptop into the line power. Normally, the computer power system is disconnected from the batteries when it's plugged into the line. The batteries only connect when you remove the line power. But, they ARE charging at all times, so IF you decide to charge the batteries IN the laptop, without a UPS, keep the computer itself OFF.

I have two batteries for mine too, and I run the laptop with one while the other is connected to the brick, charging. When it shows low on power, I switch batteries. I get about 4 hours per battery on my laptop, give or take, depending on what I'm doing and the age of the batteries.

o)

All of this assumes that you have a ground system too, right? The "Earth" ground wire (3rd wire, bare or green insulated) of a gen power system should return to the chassis of the generator, which in turn should be grounded itself, but your equipment won't care as long as it connects back to the genset; all will still operate correctly for your system.

HTH
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