

Re: Travel voltage converters..

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phatty mo <ptaylor@xxxxxxxx> writes:

Hey guys,

Goin on a trip soon, and picked up a couple of international voltage converters. 240→120V.

They say they are rated 50W and 1600W. What's up with the dual rating? Maybe 50W max for electronics, and 1600W max for resistive loads (hair dryers, coffee makers, etc.)? Pretty big jump in the numbers.

This is basically what that it.

The technology of those 50W and 1600W converters is very different.

The 50W converter designed for electronics in mind (works with practically everything that is within converter power rating) is a step-down transformer. The output of it is sinewave as incoming power. The size is limited how small you can that 50W full transformer or auto-transformer make.

The 1600W converter can be thought as a light dimmer set to some center position. They will just pass the the part of the incoming sinewave to the output. The average power of that crude waveform represents the heating power the 110V AC would give. The waveform is not sinewave, the peak voltage getting to device is typically much higher than with real 110V power etc... This kind of converter works well on simple heating loads etc.. which do not care of incoming power waveform etc..

This kind of converter is not suitable for electronic devices, transformer powered devices etc... serious equipment damage can happen.

In this type of converter you just need quite small amount of component. Some control circuitry (few discrete and/or one IC) plus the power switching component (triac, FET, etc.) with suitable heatsink.

If you use triac for switching, with 1600W load, the

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power loss on the triack would be possibly in 10–15W range...
With a low resistance FET maybe considerable less power loss.

These particular converters are small,REALLY small..
I assume it's some kind of switching converter,or something.

Those 1600W converters canbe though as very crude switching
converters.

I know the old ones used transformers,these obviously don't –they're
the size of a small box of matches,with prongs out one side,and holes
in the other.They weigh..Pfft..a couple grams maybe?
Any idea what's in these things? Maybe a triac circuit of some kind?
(not much room inside!)

I think they have a triac circuit pretty similar to normal
light dimmer.

There is a warning against using it for laptop computers,and other
similar items (which is what I wanted to run from them! Doh!)
Dare I risk it? (New laptop,PSP,cellphone charger,etc,etc.)

I don't recommend. Can become an expensive experiment.

I'm not sure the 50W rating would be enough for the laptop anyways. Bah!

50W rating is not enough for modern laptops.
The universal car adapters for laptops nowadays have power rating
in 60–120W range. Look for you computer manuals how much
it consumes (check also markings on power supply).
And then select a suitable transformer.

And also when you read the manual, check also if your computer
power supply is universal. I have seen many laptop power supplies that
have for example 100–240V input voltage range. If your laptop
power supply is this type, then you can plug it directly to 240V.

Guess i've got to find a 'transformer' type converter either way.

If your laptop power supply can't accept 240V voltage directly,
then you need a suitable converter: transformer 240V→120V.

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Other option to check is getting a new power supply for the laptop, one that works on all voltage you need to use it with.

And then just a cord/adapter set that allows you to plug it anywhere you need.

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Take a look at my electronics web links and documents at

<http://www.epanorama.net/>

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