

Re: Need electronic experts pointers...

Source: <http://sci.tech-archive.net/Archive/sci.electronics/2004-10/0034.html>

From: N. Thornton (*bigcat_at_meeow.co.uk*)

Date: 10/06/04

Date: 6 Oct 2004 12:04:38 -0700

Seraphina Lee <seraphina_lee_my@hotmail.com> wrote in message news:<1skdl01a0l415cseq3ob914k7403gve6li@4ax.com>...

> *Dear all,*

>

> *I am an electronic hobbyist... beginner :) ... and have mainly
> theoretical knowledge of electronics. I've decided to design and
> build, what i call, a BBU. I'm not sure if this is going to tedious
> but i'm willing to give it a try. I've found so far 1 schematic
> diagram and the reason i'm posting here is because i would like to
> gather more pointers regarding the BBU or perhaps links to any other
> 'royalty free' schematic diagrams which fulfils the following;-*

>

> *Design Philosophy*

> *The purpose of this Battery Back-up Unit (BBU) is for the back-up of
> equipment such as (aquarium... maybe fridges at a later stage)
> especially motor loads during power outage. During normal conditions,
> the battery will be charged through a 13A switch socket outlet. The
> equipment will be attached in series with this BBU unit. When a power
> disruption occurs, this unit will cut out the charging unit and will
> deliver power to the load via a Lead Acid Battery which is on stand-by
> mode. There will be an interruption during this switch over. When the
> power supply is available, the BBU will switch the load supply from
> Battery to main power supply. Then the battery charger will charge the
> battery that has been consumed. When the battery is fully charged,
> trickle charging mode will be selected automatically to ensure a
> healthy battery for next power outage.*

This is no beginners project. But if its what you want it could be turned into one.

Forget fancy 4 stage charging, use a basic charger circuit, just transformer, rectifier, capacitor. Or else buy a ready made multistage charger.

The trick here is to use a self oscillating relay and mains transformer for the inverter section: that way it can indeed be done by beginner. But only a beginner who knows a lethal transformer kickback when they see one, and knows how to not end up a statistic.

sci.electronics: Re: Need electronic experts pointers...

The downside of such a simple inverter is no regulation or stability. Your lead acid has a working range of something like 14 to 10.4 volts, and the transformer has resistance too, so your output V is going to be all over the shop. OK for lighting or computers, but not for fridges.

Wind a few extra turns on the TF and you can do tap changing to improve your Vout hugely, but it will never be especially stable.

Still interested?

NT