



Winglette

WIND POWER FOR YOU...

Electricity

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—DC/AC Inverters—



MLT 2KVA inverter



PICTURE GALLERY



The inverter is **one of the most important**, and most complex components of an off-grid **Winglette** wind generating system. Luckily, you don't have to understand the inner workings of an inverter, but you should understand some basic functions, capabilities and limitations.

Why you need an inverter...?

The inverter **converts the DC of your battery bank, to AC**. It also changes the voltage from the 36 or 48Volts of the batteries, to 240Volts alternating current required by your appliances. In other words, it is a power adapter. It can allow a battery-based independent power system, to run conventional appliances through conventional home wiring.

There are many ways to use DC power directly, but it applications for a normal house hold, are very limiting. For any normal situation, **you will need an inverter for almost all the devices** that use electricity as power source.

Power quality:

Some inverters produce "cleaner" power than others. **Sine wave inverters** produces a smoothly alternating AC wave form. It can be equivalent (or superior) to grid power but is relatively expensive. We recommend that you **do not try to save cost by buying modifies sine wave inverters**, for applications of a normal house hold.

Efficiency of an inverter varies with the load. Typically, it will be highest at about 2/3 of the inverter's capacity. This is called its "peak efficiency". The inverter requires some power just to run itself, so the efficiency of a large inverter may be low when running very small loads.

In a typical home, there are many hours of the day when electrical load is very low. Under these conditions, an inverter's efficiency may be around 50% or far lower. Because the efficiency varies with load, don't assume that an inverter with 93% peak efficiency is better than one with 85% peak efficiency. The 85% efficient unit may be more efficient at low power level.

Testimonials.

In the end, it is what our customers say that really matters. Here are the comments of some of them:

Johnny Hanekom, Keetmanshoop, Namibia: The two (2) machines that I've bought, exceed all my expectatoinis as far as power generation is concerned. I am really pleased with their performance, and I am planning to buy the third unit.

Johnny van der Linde, Groblershoop: We are retired on our farm outside Groblershoop, and have always experienced a shortage of electricity from the solar panels we had. With our Winglette wind generator now installed, we are seeking ways to utilize the abundance of power thats available now!

Nico Grobler, East Coast, Mozambique: We have a holiday home near Vilancuro, and are well please with our Winglette. Being a pilot for the South Africa Air ways, I just love the Winglette's modern technology and good looks!

Study the "efficiency curve" of the supplier, may help you some, in choosing a well designed inverter.,

Sizing an Inverter:

The sizing of Inverters has very much to do with the **maximum load** that one wants to draw at any give time, **as well at the startup surges that might occure**, utilizing different appliances.

Powering a water pump at a remote site, for an example, is often a large electrical load. It warrants special consideration for several reasons.

- Most pumps draw a very high surge of current during startup. The inverter must have sufficient surge capacity to handle it while running any other loads that may be on.
- Most pumps are used for automatic pressurizing. In that case, the pump will start unexpectedly, several times per day.
- Most pumps (especially submersibles) run on 230 volt power, while smaller appliances and lights use the 115 volt standard.
- AC water pumps are not very energy-efficient. The power system (as well as the inverter) may need to be substantially larger to handle the load.

It is, therefore, **important to size an inverter properly**, especially to handle the starting surge. Have a **look** at our notes on **Battery & Inverter sizing**.

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