Zephyr Vent Fan FAQs

Inverter & charge controller related questions

Q. How do I wire the Zephyr Vent Fan to the auxiliary relay?

A. Inverters (or charge controllers) may or may not have Voltage programmable relays. The inverters that do may have two different types of relays. Some have dry contact relays (just an unpowered switch) and some have regulated powered relays typically providing a modest amount of 12 Volt DC power. Most of the powered relays have enough power to run one 12 volt Vent Fan (less than 200 milliamps, or 0.2 Amp).

The Vent Fan positive and negative wires can be connected directly to these relays. Dry contact relays require that battery power be provided to one side of the relay and the other side goes to the Zephyr Vent Van (also see the installation instructions). Normally this is done with the positive wire and the dry contact relay is simply a switch. Battery negative is wired directly to the Vent Fan.

There are many inverters and charge controllers on the market and their designs are constantly changing. It is up to the installer to read the manuals and determine if it has voltage controllable auxiliary relay(s) and of which type. If it is a powered relay, the 12, 24, or 48 volt Vent Fan requires less than 200 milliamps (0.2 Amp).

The negative wire from the battery to the Vent Fan does not get connected to the relay.

Q. How do I program the relay?

A. Please read the instructions that came with the equipment you are using.

Q. What is “hysteresis”?

A. The difference between the relay activation and deactivation.

Other Questions

Q What relay works for switching a 48 volt Zephyr Vent Fan from a 12 volt powered relay.

A. There are hundreds of relays that work. The requirement is that they have a 12 volt coil and DC rated dry contacts. Grainger, Parts Express, Digikey, Allied, etc. supply many different brands that work and even a headlight relay for vehicles can be used.

Q. Is it better to run a 12 volt or 48 volt Zephyr Vent Fan when I have a 48 volt battery bank and a 12 volt powered relay?

A. It depends on the size of your system. Using a 48 volt Vent Fan powered by the battery voltage allows it to speed up as battery voltage increases, thus increasing the venting as the battery gasses increase. A voltage regulated Vent Fan will always run at the same speed. This is great for smaller battery banks and will probably increase the life of the fan. On larger battery banks with high charge rates often found in 48 volt systems we like using the larger 48 volt Zephyr Vent Fan.

Q. Can I stack two Zephyr Vent Fans in a row (series) to move more air?

A. No. If you need to move more air you can use two Vent Fans, but each one must have its own vent pipe. You could combine the two exhausts into one larger vent, i.e. combine two 24 Volt Vent Fans with 2" outputs into one 3" vent pipe using an inverted "Y", the Fans are combined in parallel. We have seen installers use up to six Vent Fans in one large system. Having more than one Vent Fan also creates redundancy.

Q. Is the Zephyr Vent Fan explosion proof rated?

A. There is no explosion proof rating on the Vent Fans. The Fans use brushless dc motors with electronics to switch the fields without arcing. The cost of an explosion proof rating is prohibitive. We have done in house explosion proof testing. Please see Vent Fan Testing under specifications.

Q. Can I run a Zephyr Vent Fan directly from a Photovoltaic Panel?

A. Yes. We recommend using a 10 to 20 watt 36-cell panel with a 12V Zephyr Vent Fan. A 5 watt panel also works, but will not power the Vent Fan when light levels are lower, such as early or late in the day and when there is modest cloud cover.