

Frequently Asked Questions - Technical

What is meant by "grid-tie"?

The word "grid-tie" is often misused. One meaning has to do with installed solar feeding back to the grid when the panels are generating more than is being used. The other is related to a transfer or cut-off switch that would enable generator power to be fed to an existing electrical panel for export through existing wiring. Neither is truly applicable to a portable, independent SunRunr system. Read on ...

Can I tie my SunRunr into my grid?

This question has two answers based on the meaning of "grid-tie" being used. SunRunrs were designed as stand-alone systems to be used independently of the grid. SunRunrs are not "installed solar" and we do not promote automatic transfer switching through an electrical panel. Manual switching to a dedicated circuit might be an option, but you must discuss options with a certified electrician. Most Master Electricians are even challenged by the conversation with our engineer/inventor regarding SunRunr's unique neutral/ground. It is EXTREMELY important that a unit's electricity would not backfeed and endanger the poor power utility lineman out there in an ice storm working to restore your power during an outage!! The best SunRunr "install" we have seen is an owner that essentially ran extension cords through walls from SunRunr to various critical appliances.

Some SUN240 owners have had a certified electrician rewire the electrical panel end of their water pump circuit to allow for the manual, physical transfer of a water pump from the grid to the SUN240 with a NEMA plug accessory. A better solution may be found on the Accessories page under Product Development where a new cable with protective enclosure will be available, allowing for the connection of the inverter's terminal block directly to the well pump circuit. Check back soon.

Can I recharge my SunRunr from the grid or a wind turbine?

Yes, we offer an AC-to-DC charger pre-wired with an AUX portal plug. Other renewable energy sources such as a 300+W wind or water turbine may be used to recharge a SunRunr with connection via an AUX plug accessory.

Explain the AC/DC output/input electricity of the system.

The rechargeable battery in a SunRunr accepts, recharges by, and can provide 12 VDC electricity. DC is then converted by an inverter to AC. Most of the electrical devices in the US you would choose to run will be 110-120 VAC and plug straight into the inverter just like into a wall socket at your home. The US also has 220-240 VAC appliances like clothes dryers and most well pumps. Many other countries also use 220-240 VAC, but at 50Hz. A 12 VDC socket is available for powering various devices that use "cigarette lighter" plugs. Aux or link cables are also available to power 12 VDC appliances directly from the battery. The link cable is also used to link units together to expand the system. Units (any model) may be linked to share their collective stored energy and allows for more energy generation with additional solar panels.

Can I buy a SUN240 then split off a 120 leg like I can with gas generators?

No. A battery-based system works differently from a combustion motor. SunRunr models are based on inverter output. There are certain situations where a transformer may be used, but your electrician must speak to our engineer at 540-234-0164 for details.

Is there a quick tutorial to remind me how specifications like Watts, Amps, Volts apply and how to compare to other products?

Try links in footer under Learn.

Are SunRunr inverters modified or full sine?

98% of SunRunr owners have modified sine units. The 3500W/6000W surge inverter pure sine upgrade is an additional \$1000, but infrequently needed. Call us about your application - pellet stove? high-end audio? desktop? More at FAQs-General. An additional, external full sine wave (FSW) upgrade is now available. It quick-connects by way of the link cord portal and is about half the cost of the full upgrade while retaining the original, internal high-load modified sine inverter. See Products page.

Can a SunRunr run 220 VAC devices like are common outside the US?

Yes, we offer the SUN220 with a 220 VAC/50 Hz inverter. Please visit the Products page for details. This model is not to be confused with the SUN240 which is similar in voltage, but produces electricity at 60Hz, an input power required by certain US equipment such as most well pumps.

What is the expected rechargeable battery life and what happens then?

The AGM battery manufacturer quotes a 150-3100 cycle, five-year life, but regular usage reduces sulfation and may increase that to over seven years. When it slowly begins holding less of a charge, the Deka 8A8D w/SAE standard automotive top post terminals is available by special order from your local battery store for about \$500 and is replaceable by an authorized Service Center or local electrician/appliance repairman. Opening the unit voids the warranty and risks personal injury.

What does AGM mean?

An AGM (absorbed glass mat) is a deep-cycle, non-spillable, lead acid battery with no charging memory, which allows for longer battery life and the ability to recharge at any state of discharge. More about AGMs in Downloads.

Do you make a Lithium-Ion model?

We have and can, but please see [SUNLION page](#) on older SUNRNR website for advantages and disadvantages and consider letting Li-Ion technologies settle down a little before ordering.

Please comment on effects of solar flares and/or EMPs.

Again, product manufacturers, not current rocket scientists, but it looks like flares would degrade a PV panel's efficiency by possibly 5% per event while the unit would not be effected (at least if it is not connected to grid or in use). (See SKY-Feb2011 for interesting article on possibly-eminant flares and the effect on our grid.) For an EMP and dependent on it's type, the best scenario is for the equipment to be out of line of sight.

Comment: A SunRunr's 14ga-side/12ga-end steel enclosure provides significant EMP protection against all naturally-occurring EMP and many man-made variants (lower frequency, shorter duration). It is in essence, a "Faradic cage". At the time of this writing, no one can yet guarantee protection against all variants. The US government is currently conducting tests to develop "total EMP protection", but to public knowledge is thus far unsuccessful because man-made EMP can appear at various frequency levels over various time intervals. Man-made EMP for use as weapon is being researched by all major world powers at higher frequencies and multiple-duration pulses. Anyone that implies total EMP protection is stretching the truth.

Comments welcome via email or Contact Form.