SOLAR STIK®

Solar Stik Technical Bulletin 9

Effective Date: 20151028

“Nuisance” Faults (Non-safety Related)

Background

The PSS-G AES Deployment Guide covers most of the setup and conditions for proper operation. “Nuisance” faults are usually the result of improper system configurations, which can lead to overload/fault conditions and tripped circuit breakers. The most common nuisance faults experienced in the AES and their remedies are described in this technical bulletin.

Fault Descriptions and Remedies

- **Power Surges and Tripped Circuit Breakers Caused by Secondary UPS within AES**

  All uninterruptible power supplies (UPSs) that are associated with the PSS-G should be removed when the AES is used to power the station. The AES ensures continuity of operations for all loads in the PSS-G, negating the need for secondary UPS integration. The PRO-Verter 7000 AGS provides continuity of power, line conditioning, and surge suppression for the load circuit.

  If there is a secondary UPS in the AES circuit, it can cause power surges when it switches between “backup” and “standby” modes. The PRO-Verter has a transfer switch that ensures uninterrupted power to the load as it oscillates between “inverter” and “AC Pass-through” (i.e., generator operation) modes. The transfer switch takes 16 milliseconds (ms) to engage either circuit, which will not cause any interruption of power to the load; however, UPS units are often set to the same switching threshold, so if they sense the 16 ms interruption, they will also switch to “backup power” mode in order to support the load. The multitude of battery circuits, switching, and charging/discharging within the AES circuit will cause power surging, possibly overloading the AES at times. Additionally, a traditional UPS is designed for fast charge/discharge service, which means ***only minutes of runtime*** for the load. The AES provides ***several hours of runtime*** for the entire system from its 16 kWh battery bank.

- **AC Overload- Associated with Raising the PSS-G Tower**

  “Overload” fault messages display when the AC load on the inverter/charger’s output has exceeded the inverter’s internal AC voltage and current protection limits. This can be caused by inductive loads such as motors or pumps. If the PRO-Verter is being used to raise a PSS-G tower, and the tower binds due to physical damage, poor condition, or has additional payloads (weight), it is possible this fault will occur.

  If the overload condition lasts for less than 10 seconds, the fault automatically clears and the unit restarts and resumes operation. However, if the overload occurs for more than 10 seconds, the unit shuts down and the fault will require a manual reset.

MADE IN USA

800.793.4364
info@solarstik.com
www.solarstik.com

- **Circuit Breaker Trip Due to Inadequate Battery Capacity or Line Surge**

  Some PRO-Verters can require up to 200 amps from the battery bank during peak loads. If less than the recommended quantity of five (5) Li Expander Pak are used, the Paks' 50 A circuit breakers may trip because of too much current flow out of the battery bank. Conversely, if the charger is attempting to charge the batteries at its full rate, it will also trip the Li Expander Pak breaker. At a minimum, the combined values of the Li Expander Pak circuit breakers must be greater than the rated charge current from the PRO-Verter.

800.793.4364
info@solarstik.com
www.solarstik.com