

# Slow Transfer Time on the Freedom 458

## Technical Bulletin Freedom Inverter/Charger

976-0048-01-01 Rev A

### Background

Several Western RV customers have recently complained of excessively long transfer times when going from generator to inverter power. They are usually running with the Auto Gen Start (AGS).

### Problem

The Freedom 458 has a specified transfer time of 26 ms to 40 ms. Customers are experiencing transfer times as long as 40 seconds. The long transfer time means that appliances powered by the Freedom 458 can shut down prematurely. For example, clocks and computers may have to be restarted.

Delayed transfer times can occur when the Freedom 458 has been charging at a high rate for a prolonged period of time and it is installed in a poorly ventilated area. The Freedom reacts to elevated thermal conditions by first turning on the fan. If the temperature continues to rise, the charger reduces its output to 75% of its charging capacity. Finally the charger turns off completely. In most thermal situations the reduction in charge current to 75% of capacity stabilizes the temperature and the Freedom 458 continues to charge the batteries. If, however, AC power from shore power or from the generator is removed when the batteries are not fully charged, the Freedom transfers to invert mode. The resulting high temperature situation can cause the inverter to go into a thermal shutdown and not produce AC power for 10 to 40 seconds, until the temperature drops. Once the inverter has cooled down, it produces power automatically.

### Solution

Western RV coach owners can solve the problem by:

- Providing ventilation to the compartment housing the Freedom 458 when using the AGS. This can be done by opening the bay door or providing additional air circulation in the compartment.
- Operating the generator manually and allowing it to run until the remote display shows less than 50 amps DC charge current. This reading ensures the charger is in acceptance mode and the batteries are charged to about 90% capacity.
- Keeping batteries charged above 50% of capacity, thus reducing the length of time it takes to charge them.

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Contact information:

**Phone:** 1-800-670-0707 (toll-free in North America)

**Phone:** 1-604-422-2777 (outside North America)

**Fax:** 1-800-994-7828 (toll-free in North America)

**Fax:** 1-604-420-1591 (outside North America)

**Email:** [CustomerService@xantrex.com](mailto:CustomerService@xantrex.com)

**Web:** [www.xantrex.com](http://www.xantrex.com)