

Technical Note

Link 2000

512-0090-01-01 Rev 1

Monitoring Two House Banks With A Third Engine-Start Battery

Introduction

A popular design for primary DC electrical systems consist of two large deep cycle house banks and a dedicated engine starting battery/bank, with an emergency parallel switch for starting the engine from the house banks if necessary. In this type of system, all the house DC loads are placed on the house banks, and the engine start battery is isolated and reserved for engine starting only. This type of system has several advantages, including simplicity of design, ease of use, and reliable operation. The Link 2000 is designed to monitor and control charging of two deep cycle battery banks, but a third starting battery/bank can also be in the system and be charged along with the house banks.

Installation

The attached wiring diagram shows how to install a Link 2000 for monitoring this type of system and to control charging via the inverter / charger. In this system, the inverter is connected through a fuse to its own battery switch and to the two house banks. The house DC distribution system is connected through a master breaker to its own battery switch. This method of switching provides several advantages. With two switches, the user has the flexibility to:

- Set the inverter / charger switch to BOTH for charging from shorepower while turning OFF the house switch to remove all DC loads.
- Run the inverter on one bank while running the DC house loads on the other bank for maximum noise immunity from inverter noise for the DC loads.
- Dual switches eliminate the possibility of the charger being used to power DC loads directly or used to attempt engine starting as could happen in a single switch system if the switch were inadvertently left in the OFF position.

Remember that with either switch in the BOTH position, both banks will be paralleled and act like a single bank during charging and discharging.

For charging all three banks from an alternator, a three-bank isolator can be used between the alternator and the three banks. In the attached drawing, the house battery switch also controls charging of both house banks from an alternator. A battery combiner (BC) like the Xantrex PathMaker will take care of charging any un-selected house bank, and the engine start battery. The battery combiner will also combine all three banks when the inverter / charger is the charging source.

The emergency start switch is only closed when starting the engine from the house banks is required. This switch can be a manually actuated one or can be eliminated by using the boost start solenoid in the PathMaker instead.

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