3.0 Operation

The MS Series inverter has two normal operating routines: Inverter mode, which powers your loads using the batteries, and Standby mode, which transfers the incoming AC current (i.e., utility power or a generator) to power your loads and to recharge the batteries. This inverter also includes an extensive protection circuitry to shut down the inverter under certain fault conditions.

3.1 Inverter Mode

When the MS Series is first powered up, it defaults to the OFF mode. The momentary ON/OFF power switch (Item 1, Figure 1-1) must be lightly pressed to turn the inverter ON. Subsequently pressing this switch alternately turns the inverter OFF and ON.

OFF – When the inverter is OFF, no power is used from the batteries to power the AC loads, and the status LED will be OFF. If AC power from an external source (utility or generator) is connected and qualified on the inverter's AC input, this AC input power will pass through the inverter to power the AC loads. However, if this AC power is lost, the AC loads will no longer be powered because the inverter is OFF.

When the inverter is turned ON, it operates either by "searching" or "inverting", depending on the connected AC loads.

Searching – When the inverter is first turned ON, the automatic Search feature is enabled. This feature is provided to conserve battery power when AC power is not required. In this mode, the inverter pulses the AC output looking for an AC load (i.e., electrical appliance). Whenever an AC load (greater than 5 watts) is turned on, the inverter recognizes the need for power and automatically starts inverting. When there is no load (or less than 5 watts) detected, the inverter automatically goes back into Search mode to minimize energy consumption from the battery bank. When the inverter is searching, the inverter's green LED flashes (fast).

Info: The factory default value for the Search feature is 5 watts. It can be turned off or adjusted from 5 to 50 watts using a remote display.

Inverting – When a load greater than 5 watts is connected to the inverter output, the MS Series inverts the DC power from the battery and supplies 120 VAC power to your sub-panel. The inverter's green LED flashes once every 2 seconds (medium flash) to indicate it is inverting. The amount of time the inverter can be inverting and providing power is directly related to the amount of AC loads that are connected, and the capacity of the battery bank. Refer to Figure 3-1 to see the flow of power from the DC input to the AC output while in the Inverter mode.

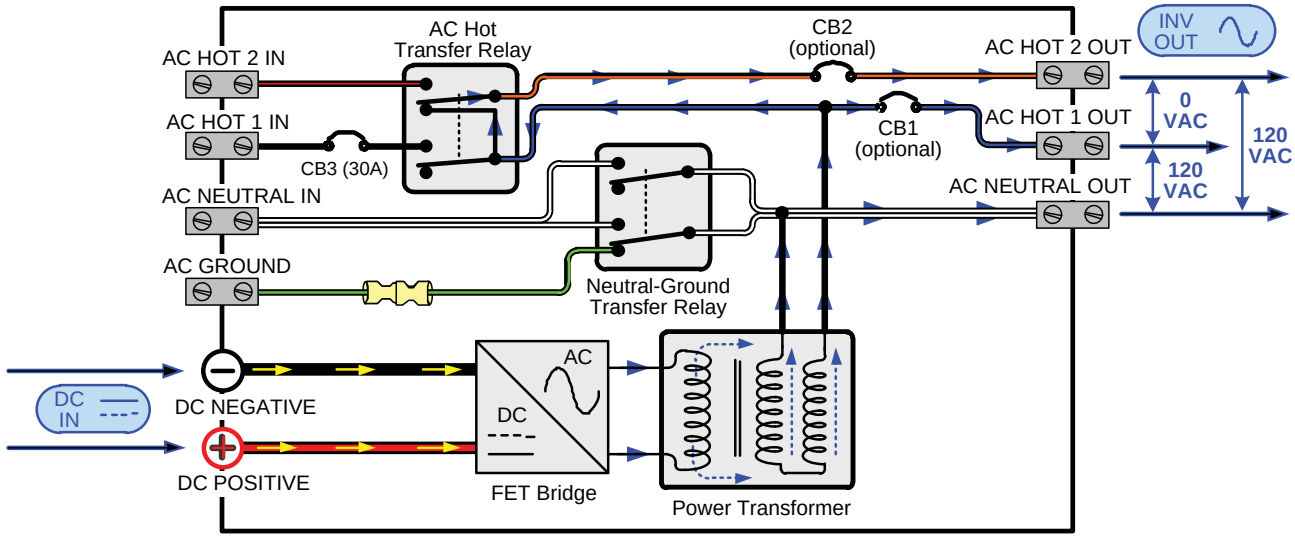

Figure 3-1, Power Flow - Inverter Mode