Service Bulletin

Bulletin No: SB-0021-19-274-SW Effective Date: 10-01-2019 Type: Instructional

Subject: Amp Coils vs Calibrated Shuts

Scope
This service bulletin provides information on battery monitoring systems installed in conjunction with a Superwind 350 or Superwind 353 turbine and why they are required to utilize amp coils rather than calibrated shuts.

Operational impact
The Superwind SCR Marine charge controllers (models 12V, 24V & 48V) are 100% active PWM (Pulse Width Modulation) temperature compensated charge controllers. They feature instant diversion and are constantly sampling the battery voltage through internal communications. When the charge controller and wind turbine are properly installed, it will fully charge the system batteries or battery banks safely, maintaining each at a 100% State of Charge (SOC).
Amp coil-based monitoring is an accurate, non-invasive method of monitoring, and compatible with the SRC charge controller. In this system the amp coil senses the electricity flowing from the turbine and/or charge controller via induction, never interfering with the charge controller's connection or battery communication. This is the preferred method for monitoring the superwind system.
A calibrated shunt is an inline communication device that sends out and receives data through the line. If a calibrated shunt device is installed between the SRC charge controller and the battery bank, the result will be reduced or eliminated charge (moment by moment) to the batteries from the SRC Marine charge controller. Installation of a calibrated shunt device causes the controller to respond as though no battery is connected to the system or that the battery (or bank) connected is fully charged, regardless of actual SOC. The latter is particularly true if solar panels are also wired into the same calibrated shunt device. Due to this scenario, a calibrated shunt is not recommended for use in monitoring the superwind system.

Additional monitoring options
A simple way to verify the output of a Superwind turbine is to use a hand held "clamp on" amp meter. With the wind blowing at 7 mph (3.5 m/s) or more, clamp the amp meter around the (+) output wire of the turbine or between the charge controller and the battery bank. A small value of amps should be visible, with higher numbers at higher wind speeds. Remember that new Superwind turbines require a bearing 'break-in' period of one to two weeks, depending on wind availability during the first few weeks of commissioning. Afterwards, the turbine will generate increased amounts of energy - particularly at lower wind speeds.

For more information please contact Mission Critical Energy at (716) 276-8465 or visit us at www.missioncriticalenergy.com.