



Service Bulletin

Bulletin No: SB-0016-19-246-SW Effective Date: 09-03-2019

Type: Information

Subject: Superwind Turbine Operation During High Winds

Scope

This service bulletin provides information on emergency operational recommendations for the SW-350, SW-353 and SW-1250 turbines during extreme wind events.

Background

The Superwind SW-350, SW-353 and SW-1250 wind generators are designed for continuous autonomous operation under a wide range of conditions, including occasional harsh weather events, high winds and storms. Extreme wind conditions are those outside the range of standard wind turbine operating conditions. Examples of extreme wind conditions include hurricane and/or tornado force winds that might damage the wind generator directly (through the wind's force) or indirectly due to flying debris.

Wind speed ratings

In 2019, **superwind GmbH** increased its wind speed survival rating from 100 MPH to 110 MPH with additional and now concise operational parameters. For Superwind SW-350, SW-353 and SW-1250 users, this means that between 0 and 80 MPH, the SW-350 or SW-353 can remain in the "ON" (RUN) position and continue to be fully operational. Between 81 and 110 MPH, Superwind turbine survival is likely when placed in the "STOP" Mode (OFF).

NOTE: All provided wind speeds are valid for hub height and are meant as instantaneous values in non-turbulent wind flow.

Operational impact and benefits

With this vital information, should the unit be located in the potential path of a tropical storm or hurricane, a user can switch the turbine to the "STOP" (OFF) position well before a forecasted storm arrives.

When to take action

Under emergency conditions (i.e. sustained winds above 80 MPH) it is advisable to place the turbine out of operation using the following procedures:

1. Place the safety switch in the stop position and if possible, remove the fuse (or turn off the breaker) between the wind turbine charge controller and the batteries.
2. If practical and safe to do so, removal of the rotor hub assembly (rotor hub, blades and connecting bolt) will reduce the possibility of damage and increase turbine survivability.

To accomplish this:

- a. Make sure the unit is turned off (see step #1 above).

- b. Remove the connecting rotor hub bolt using a 10mm hexagon wrench (SW-1250) or a 6mm hexagon wrench (SW-350 & SW353).
- c. Remove the hub (with blades still attached) from the turbine nacelle and place the entire rotor hub assembly in a secured area. The nacelle and wind vane can survive higher winds without the blade assembly attached, however keep in mind that even these may be damaged by flying debris.

After emergency wind conditions have subsided, reinstall the hub assembly following the instructions provided in the Superwind SW-350, SW-353 or Superwind SW-1250 (model dependent) owner's installation manual.

Additional survival strategies

For commercial users, a remote control stop switch (the SW-35x-ARS V1) is available for use with the SW-350 & SW-353 series. This switch can be operated manually via the dry contact available on most any standard monitoring system or when used in conjunction with a monitoring & SCADA system such as the FlexSCADA Q5 or FlexSCADA Q5 PRO. With the addition of an anemometer (wind speed sensor) or an Anemoment Trisonica Mini Weather Station (Wind, plus Wind direction with optional Temperature and Humidity) the SCADA system can automatically shut down the turbine at 70 MPH (well ahead of potentially dangerous winds over 80 MPH) while also greatly improving the turbine's survival in winds above 100 MPH. This system also allows the turbine to automatically restart once winds have decreased to an acceptable, pre-set level by continuously monitoring wind speeds. Please contact Mission Critical Energy for more integration information regarding this strategy.

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



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