

# Powertronix Corporation

## Efficient, Reliable AC Line Reactors and Rotor Chokes for Wind Energy Applications

### Powertronix to expand on its Renewable Energy product line by offering AC Line Reactors and Rotor Chokes for Wind Energy Applications

Nowadays, more and more research and development efforts are being placed on providing renewable energy harvesting. Manufacturers are constantly under pressure to design long-term, high efficiency systems for these energy harvesting applications. As more and more emphasis is placed on the development of wind turbine applications, these manufacturers demand that its electrical component suppliers meet the highest standards. Some of the most important standards include the following:

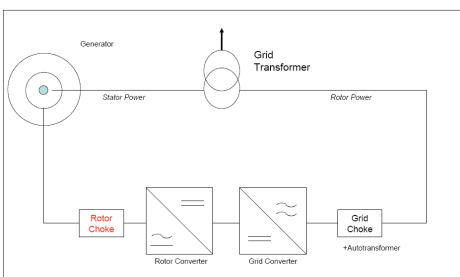
- **Mechanically Robust Construction:** As maintenance and service repairs of wind turbine components can be very costly, wind turbine manufacturers demand components that provide long term, reliable operation in adverse weather conditions.
- **Efficiency:** As efficiency requirements are continuously pushed to their limits, delivering electrical components with low losses is essential.

Drawing off twenty years of experience providing long term, high quality power solutions for medical, renewable, and industrial applications, Powertronix has expanded on its product line and has introduced AC Line Reactors and Rotor Chokes for the wind energy applications.

#### AC Line Reactor and Rotor Choke Basics:

An AC Line Reactor is typically used as a protective device for filtering any harmful line disturbances that can cause failure to some electrical components. An AC Line Reactor introduces a highly controlled impedance to a given electrical circuit. With this impedance, the AC Line Reactor reduces any harmonic distortion and provides a lighter weight, less expensive alternative to isolation transformers for isolation of equipment that is sensitive to these harmonics.

In wind turbine applications, a typical electronic setup of wind turbine + line reactor used as a rotor choke can be depicted in the picture below:



Block diagram depicting example implementation of Powertronix rotor choke for wind energy applications.

In wind energy applications, AC Line Reactors or rotor chokes are used as a device to absorb any line disturbances. These disturbances can be harmful and could damage inverters and other voltage sensitive equipment such as SCR controllers and transistors.



With over ten years of developing and manufacturing of Renewable Power Solutions, Powertronix Rotor Chokes are optimized electrically, mechanically, and thermally

#### The Powertronix Advantage:

The Powertronix rotor choke is specifically designed to optimally perform even in harsh weather conditions presented in wind turbine applications. Working with twenty years of experience providing only high quality power solutions for markets with stringent requirements such as the medical and renewable industries, Powertronix Corporation provides rotor chokes and AC Line Reactors with special air gap construction methods used to ensure extended life cycle and maintenance free construction. Special material is used to coat all Powertronix Rotor Chokes and Line Reactors to prevent any external debris that can lead to failures in tough, environmental conditions. In addition, special lifting and mounting holes are provided with each Powertronix rotor choke for easy installation and placement in a customer's system.

Along with special mechanical construction, efficiency requirements are of the utmost importance. With these stringent efficiency requirements taken into consideration, all Powertronix AC Line Reactors and Rotor Chokes use high quality steel and are manufactured to minimize core losses. All Rotor Chokes and Line reactors are optimally designed to reduce eddy currents, a main component of these core losses. In addition to robust construction, carefully manufacturing an AC Line reactor with accurately controlled gaps in the flux path, ensures correct impedance values of a Powertronix AC Line Reactors.

With a commitment to being one of the leaders in providing power solutions for renewable energy applications, Powertronix continues to introduce, efficient, reliable wind energy power solutions.

#### About Powertronix Corporation:

Powertronix Corporation has been in the business of providing power solutions for renewable energy manufacturers, including wind energy Applications for over ten years. Drawing off the experience of developing an active partnership with some of the leaders in the renewable industry, Powertronix has designed, developed and manufactured renewable power solutions that achieve 100 percent form, fit, and function for a customer's requests for applications such as wind turbines, solar inverters, etc.. From inception of the design, Powertronix's technical staff works engineer to engineer to ensure that all of the customer's specifications are met. Over the years, Powertronix has been able to refine and develop an impressive product line for wind energy applications which now includes:

Powertronix facilities are ISO 9000-2008 certified with facilities audited quarterly by UL. Powertronix implements robust quality system with IP/OP/QP best practices in all of its product designs. An active staff ensures optimal product designs, cost effective manufacturing and product designs, just in time (JIT) deliveries, and dependable quality. To find out more information on Powertronix as well as renewable power solutions developed by Powertronix, please contact sales@powertronix.com or (650) 345-6800 for more details.

#### Powertronix Rotor Choke Features:

- **Special Air-Gap Construction:** Mechanically constructed for high quality operation in even the harshest environments.
- **Efficient, Low Losses:** Optimal construction to reduce eddy current losses.
- **Extends Lifetime of SCR Controllers and Transistors:** Filters line disturbances that can prove harmful to electronics.
- **Durable Coatings:** Prevents any debris and protects to unit from corrosion
- **Easy to Install:** Provided with lifting and mounting holes for easy installation in wind turbine applications
- **Available in a Wide Range of Standard Ratings**