FOR IMMEDIATE RELEASE

Wind Turbine Generator Bearing Wireless Temperature Monitoring

XEMC Darwind monitors remotely the bearing temperature of its high-performance wind turbines with wireless passive SAW sensors for improved reliability, security and productivity.

Sophia-Antipolis, France – April 2012 – In the fast growing and demanding market of wind power, manufacturers and operators constantly seek new ways of reducing operation costs while optimizing asset return. XEMC Darwind implements continuous generator bearing monitoring with wireless SAW sensors from SENSeOR to detect undesired temperature increases and avoid the resulting damages, thus improving turbine reliability.

XEMC Darwind, global supplier to the wind industry, designs and builds high-end multi-megawatt turbines based on Direct Drive Permanent Magnet generator technology.

As the bearing condition is determined by its temperature (inner and outer ring), time, and stress, XEMC Darwind engineers decided to instrument the turbine with remote real-time temperature control. On the outer bearing – rotating part – only a wireless sensor was applicable. SENSeOR covered their need with not only a wireless but also totally passive and maintenance-free sensors.

Based on SAW technology (Surface Acoustic Waves), these sensors operate with Radio-Frequency communication. They are not affected by harsh environment, electro-magnetic fields and harsh climate conditions. As they require no maintenance and feature infinite autonomy, they are well suited for offshore applications, where maintenance interventions are always very difficult and costly. More affordable and less complex than Vibration Analysis systems for instance, they allow direct measurement on the most critical points. They thus provide earlier and more accurate indication of possible defect than classic sensors located on the engine casing.

“We constantly seek for new ways to improve the performance and reliability of our wind turbines. These wireless batteryless sensors enable measurement on the rotating part inside generator, on the outer bearing, where we monitor continuously the temperature for safety reasons.” says B. F. Ramadhani, Electrical Engineer at XEMC Darwind.

XEMC Darwind and SENSeOR engineers adapted the sensor mounting to the application requirements (shape and material, diameter, insertion length, antennas). Two wireless thermowell packaged sensors were screwed in the turbine outer bearing. Antennas and transceiver are deported in the generator and the interrogation distance is one meter. The two sensors are interrogated simultaneously. Measuring temperature range is -20°C to 120°C. This cost-effective and modular monitoring solution detects abnormal temperature increase and triggers an alarm in the XEMC Darwind system, to prevent harmful thermal expansion, thus enabling reduced downtime, increased security and asset protection, and optimal productivity.

Product information:
Wireless passive SAW sensors in thermowell stainless steel packaging
Measuring range: -20°C +120°C
M14
L (Insertion) 185 mm
Ø 8 mm
Other products available with adaptable length & diameter
Information and inquiries: contact@senseor.com
About SENSeOR

SENSeOR exploits Surface Acoustic Waves (SAW) to conceive unique-patented wireless passive sensors for temperature, pressure, strain and torque measurements. With infinite autonomy and no maintenance required, these sensors perform enhanced condition monitoring in Automation, Energy, Transportation – even in motion – like inside engines, in tunnel ovens or on moving belts. Created in 2006, SENSeOR is headquartered in Sophia-Antipolis (France) with offices in Besançon (France) and Freiburg (Germany), and employs 20 people. Its expert engineer team provides field engineering services and customized developments in addition to a portfolio of standard sensors, to help its customers solve their measurement challenges. Further information: www.senseor.com or contact@senseor.com

About XEMC Darwind

XEMC Darwind is a Chinese-Dutch design, engineering and manufacturing company of direct-drive permanent magnet wind turbines. XEMC Darwind team is dedicated to set a new standard for energy performance and availability, significantly lowering the operational costs of wind energy, and to become a global supplier and service provider of both on- and offshore Direct Drive Permanent Magnet Generators. XEMC Windpower’s acquisition of Darwind and VWEC in 2010 built a strong alliance, able to boost the rapid development, prototyping and series production of both onshore and offshore turbines. Field experience and hard data, technological knowhow from both countries and the assets of a very strong & ambitious parent company are now combined into one: “Dutch design integrity & Chinese industrialization power” with the goal to provide the highest earning power to the customers.

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