



DEHNdetect - Quick as a flash, strikingly smart and at the same time flexible and easy to install

Wind power makes a sizeable contribution to the total power generated from renewable energy sources. The installation and operation costs must be amortised over the average 20-year operating phase of these plants. In order to do this, the entire lifecycle of the plants must be continually optimised and adjusted to changing circumstances, technological or economic. Constant monitoring and foresighted maintenance are essential. This is where DEHNdetect comes into play. This new lightning current measuring system reliably detects lightning events both on- and offshore. It has a large measuring range and can therefore also detect the long stroke component of the lightning current which is often responsible for melting rotor blades due to its high charge. DEHNdetect is flexible since it is modular in design and easily retrofitted.

DEHNdetect measures lightning currents, has a large measuring range from 60 A to 250 kA and detects not only impulse currents in this range, but also the dangerous long stroke currents (ICC only events - **I**nitial **C**ontinuous **C**urrent). Damage resulting from a lightning strike does not necessarily lead to the immediate failure of the turbine and, thus, lightning events often remain undetected. Especially in the case of upward flashes the initial long stroke current flowing is only a few 100A, but it can be the main cause of melting, e.g., on the receptors of rotor blades. The resulting damage may be severe.

To prevent damage to the rotor blades or other components, DEHNdetect registers the total current flowing through the system as well as individual partial currents in the rotor blades. In detail, **DEHNdetect** registers the peak current values in the system, the specific energy, the load and the rise time of the lightning current and long stroke current. The minimum trigger level is 60 A. This can be adjusted upwards by the operator.

In order to be informed about the lightning event in real time, the measured data can be integrated into the IT infrastructure of the wind turbine via existing interfaces using a Modbus TCP interface. The data can then be easily read out and managed via SCADA systems.

DEHN SE + Co KG

Postfach 1640
D-92306 Neumarkt
Tel. + 49 9181 906-0
Fax + 49 9181 906-1100
eMail: info@dehn.de
www.dehn-international.com

Corporate Communication

Petra Raab
Tel. + 49 9181 906-1426
Fax + 49 9181 906-551426
eMail: petra.raab@dehn.de

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The wind turbine operators are thus always aware of any lightning events that occur and can use this information when planning maintenance and service activities.

The modular design of the DEHNdetect measuring system is also a huge advantage. It can be installed directly by the wind turbine manufacturer or retrofitted in existing systems. Installation is quick and easy and can be adjusted to the specifications of the individual turbine. Since no cable connections between the rotor blade and the hub or between the hub and the nacelle are necessary, DEHNdetect is a device that is particularly easy to retrofit. This means that all essential information about a lightning event is now also available for existing plants in order to optimise maintenance and service work and thus increase plant efficiency.

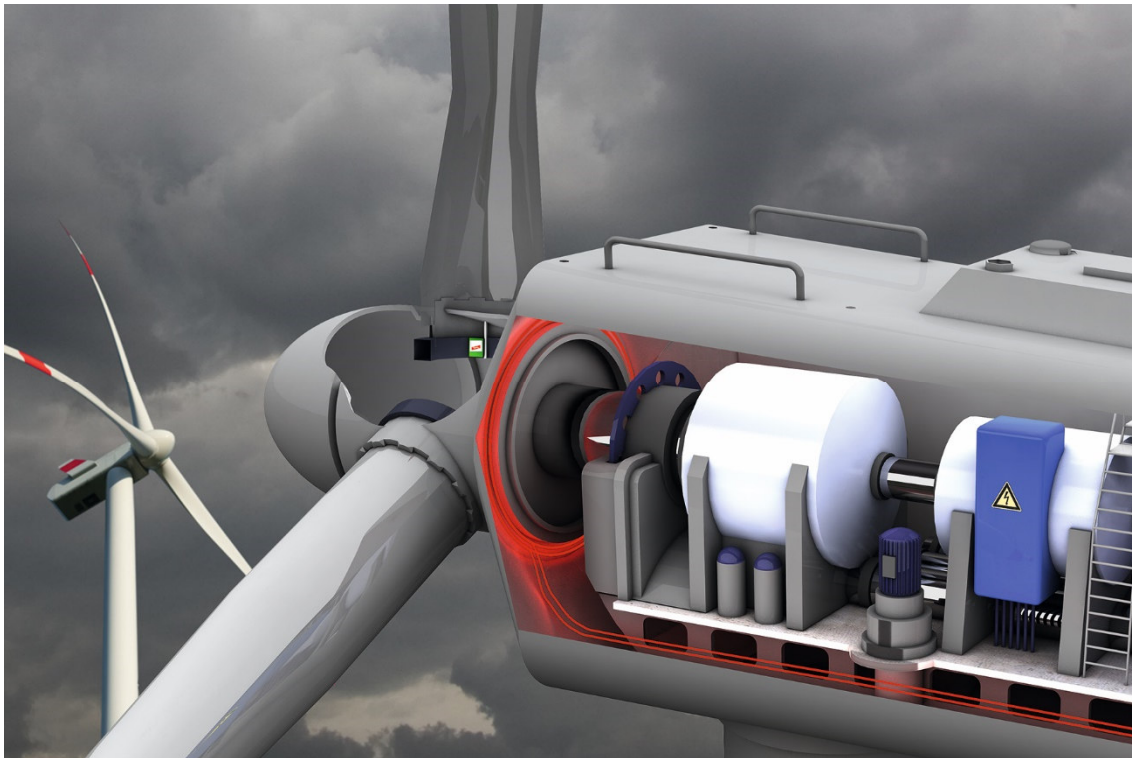
Quality awareness, customer proximity and a wide range of services make DEHN a reliable partner when it comes to lightning and surge protection and safety equipment. We will be pleased to help you select the right solutions and devices. We also provide inspection services at our test centre where, for example, lightning currents of up to 400 kA can be simulated; an unparalleled accomplishment worldwide.

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DEHN is a market-leading, globally active family-owned company for electrotechnology with about 1,900 employees worldwide. DEHN offers innovative products and solutions as well as comprehensive services in the field of **surge protection, lightning protection and safety equipment**. DEHN chiefly, but not exclusively, focuses on the protection of plant and building technology; transport, telecommunications and process industry systems; and photovoltaic systems and wind turbines. The company's continuous growth is based on more than 100 years of tradition and experience as well as the highest quality standards and consistent customer and market orientation.

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