



Wind Solutions

Elevate your blade performance

Expert condition monitoring for onshore and offshore

Protecting the investment and optimising the energy yield are the top priorities when operating wind turbines. If the rotor blades suddenly come to a stop because of unexpected damage, this can mean longterm yield loss. If undetected, small anomalies, such as broken screws, can develop into massive damage.

It is therefore important to constantly monitor the crucial components of the wind turbine. The BLADEcontrol® rotor blade monitoring, TwinCap® bolt monitoring for blade bearings and BOLTcontrol bolt breakage detection systems from Weidmüller offer this possibility. Reliable deviation detection makes it possible to plan service tours before serious damage occurs. At the same time, maintenance schedules can be optimised, and system stops for maintenance work can be planned for low wind phases.

Your advantages:

- Saves the investment through reliable damage detection
- Security for planning and operation through early recognition of deviations
- Optimisation of maintenance plans based on condition and operational data
- Global footprint of already implemented systems and Weidmüller service locations



More information on our website:
www.weidmueller.com/elevate-blade

Our condition monitoring solutions for your system

Rotor blade monitoring with **BLADEcontrol®**

With BLADEcontrol® you can detect even the smallest damage to rotor blades, e.g. blade tip damage caused by lightning strikes, trailing edge cracks, web separation, bonding defects or blade bearing damage. This is achieved by measuring inside the blade, at the point where the damage occurs.

Your advantages with BLADEcontrol®:

- Reduction of life cycle costs through reduction of repair and downtime costs
- Yield optimisation through early detection of rotor blade misalignment
- Asset management through permanent condition monitoring
- Continuous data collection and information on the condition of the rotor blades 24/7
- Easy access to data, analyses and information via our online platform WebVis



Blade CMS BLADEcontrol®



Blade bearing CMS TwinCap®

Blade bearing monitoring with **TwinCap®**

A cracked nut is an indicator of a crack in the blade bearing. The TwinCap® sensors detect cracks in bolt nuts and disconnect the circuit as soon as a nut bursts open. An evaluation unit signals the damage to the control unit in order to switch it off.

Your advantages with TwinCap®:

- Early failure detection and communication
- Integrated LED for visual detection of damaged nuts
- Suitable for offshore applications (Protection class IP68)
- Suitable for M30 nuts with and without washers

Bolt breakage detection with **BOLTcontrol**

The patented BOLTcontrol monitoring system recognises broken bolts and prevents consequential damage to wind turbines. Blade bolts act as a bolted connection between the hub and rotor blade and are therefore permanently exposed to dynamic loads. BOLTcontrol not only recognises a broken bolt, but also offers protection against the consequential damage caused by broken bolts.

Your advantages with BOLTcontrol:

- Maximum safety
- Protection against consequential damage to the wind turbine
- Reduction of downtime and repair costs
- Adaptable to different turbine types



BOLTcontrol - bolt breakage detection

Optimise your system availability with us and make service calls easier to plan. We will be happy to advise you on your individual requirements.

We are looking forward to the dialogue with you!



Your contact:

Hans Schlingmann
Vice President Wind Solutions
Hans.Schlingmann@weidmueller.com