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Beckhoff at Husum Wind: Hall 5, Booth B28

AMP8000: Distributed Servo Drive system for nacelle adjustment in wind turbines

Space and weight-saving drive solution for azimuth control

The AMP8000 distributed Servo Drive system is ideally suited for adjusting the nacelle of a wind turbine. AMP8000 integrates the servo drive directly into the servomotor in a very compact design. This relocation of the power electronics reduces the space requirements in control cabinets and cabling.

The result: significant savings in terms of weight, construction volume, material and installation effort. In addition, the load and the resulting wear on the maintenance-intensive hydraulic brake systems are considerably reduced and, as a result, in comparison with conventional yaw solutions, efficiency and safety are increased.

Complete wind farms can be optimised with PC-based control technology. For this purpose, the complete, universal component kit from Beckhoff is available, ranging from the TwinCAT Wind Framework software to the ultrafast EtherCAT communication and from powerful condition monitoring functions to the AMP8000 as an advanced drive solution for azimuth control.

Hydraulic brake systems are typically used for the horizontal orientation and locking of the wind turbine nacelle apart from electric drives. During wind direction tracking, these brake systems provide a counteract torque to that of the electric drive. The permanent use of the brake unit for active wind tracking, however, not only causes unwanted noise, but

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also constant abrasion and wear in the azimuth system, resulting in high maintenance and service requirements. The use of electric drive systems, which already exist in any case, to develop the required counter-torques and to clamp the yaw mechanism reduces wear and improves efficiency. With the AMP8000, the required braking performance or rigidity with optimum torque distribution can be implemented directly in the electric drive system.

Distributed Servo Drive system saves space in the wind turbine nacelle

As today's wind turbines offer less and less space for control cabinets, any additional weight and volume must be avoided, in the nacelle in particular. The AMP8000 significantly reduces the space requirements for the drive in the control cabinet. In fact, the space requirements for the drive in the control cabinet can be eliminated entirely through the use of the new AMP8620 IP65 supply module, because the AMP8620 module is directly connected to the mains supply and contains all circuitry components required for this, such as mains filter, rectifier and charging circuits for the integrated DC link capacitors. Depending on the power requirements, the supply module can control up to five distributed AMP8000 Servo Drives via EtherCAT P, i.e. via a single cable for EtherCAT and power. Preassembled connecting cables simplify logistics considerably and minimise wiring errors. The motor cabling and installation requirements are also reduced effectively.

➔ www.beckhoff.com/amp8000

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Press picture:



Picture caption:

Distributed Servo Drive system with the one cable solution EtherCAT P:
AMP8000 provides the ideal basis for compact azimuth control.