

brakes

Brake suppliers

Security is a big topic in wind power systems; precise control of the plant performance in all conceivable situations is considered to be very important. Brake systems have therefore developed in the wind power industry into complex, 'intelligent' subsystems that cooperate with the complete plant and its main controller. Beckhoff offers compact control solutions for brake systems in the form of Embedded PCs or Bus Terminal controllers.

Svendborg Brakes

PC Control for SOBO® brake controller helps ensure wind turbine safety

Svendborg Brakes is one of the best-known manufacturers of brake systems for wind turbines and is following the trend towards increasingly powerful and more intelligent systems. Beckhoff supplies the hardware for Svendborg Brakes' SOBO® controller.

The Danish company, which today operates internationally and has a growing global presence, supplies brake systems for azimuth and rotor as well as safety brake systems and rotor lock systems. The supplied systems are used primarily to decelerate the rotor – on the fast or slow shaft depending on the design – and to lock it.

The precise alignment or adjustment of the nacelle to the wind direction and the stabilization of the azimuth system are ensured by the azimuth brakes. The loads that the brake system has to cope with are enormous. However, by the interaction of the aerodynamic brake by means of pitch adjustment and the active mechanical brake, all plant sizes up to the multi-megawatt class can be managed securely.

The control of the brake systems is a crucial factor in addition to suitable brake lining materials and a mechanical design capable of bearing high loads.

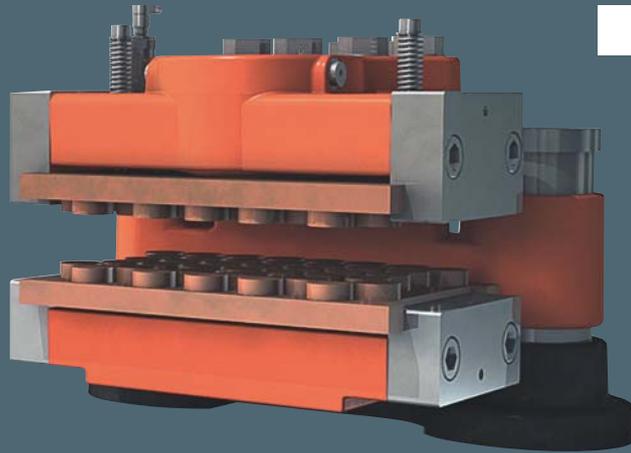
To this end Svendborg uses its own controller called SOBO® (Control – Soft Braking Option, also with 'fault-ride-through' function if necessary),

with which the hydraulic unit of the brake systems is controlled. The goal is a controlled, precisely steered and even braking process that is as gentle on the entire plant as it is on the brake system and its mechanical components. The braking behavior of the SOBO® controller can be adapted exactly to the individual type of wind turbine.

Beckhoff supplies the necessary hardware with the flexibility that ensures versatile applicability of the SOBO® controller – which also includes applications outside the wind power industry, e.g. for cranes and conveyor belts. A Bus Terminal Controller from Beckhoff's BX series (BX8000) and various Bus Terminals are used, including an incremental encoder terminal for the detection of the speed of the main shaft. The wide applicability is made possible in particular by the flexible TwinCAT automation solution. In addition, communication with the higher-level automation system is greatly simplified, especially when an automation platform from Beckhoff is also used, as is the case in many wind turbines.

Svendborg Brakes www.svendborg-brakes.com

The BSAK3000 hydraulic brake system, which is controlled by the SOBO® Control developed by Svendborg, enables a controlled and precisely steered braking process. The system can generate a pressing force of up to 55,000 N.



Precise control of plant performance in all conceivable situations is a big topic in wind power systems. Brake systems have therefore developed into complex, "intelligent" subsystems that cooperate with the complete plant and its main controller.

