

Safe pitch and azimuth feedback

Integrated safety ensures seamless communication within the wind turbine.

Particularly in the case of wind turbines, including in the offshore area, users are interested in remotely monitoring every last corner of the respective system. This is impeded by control and regulation concepts which assign different tasks to different, mostly heterogeneous systems. The certified absolute rotary encoders from TR-Electronic remove one of these obstacles. Safe position and speed information is transmitted directly to suitable controls via certified bus systems – entirely without additional hardware such as e.g. special safety modules. The same information is simultaneously available via the faster, unsafe part of the field bus Industrial Ethernet protocol, which enables the absolute position control loop to be closed. The position change can also be picked up directly at the encoder as an incremental signal for drive commutation. The complete system then consists of fewer individual parts, and these are specially designed for increased safety. This increases the safety of the overall system.

TR-Electronic is one of the first manufacturers to produce certified absolute rotary encoders with integrated safety. The development, technology and production of these devices are certified by TÜV. They are used in systems which require Safety Integrity Level 3 (SIL 3: IEC 61508 / EN 62061) or Performance Level e (PL e EN ISO 13849-1).

Absolute rotary encoders CDH75 and CDV75 from TR-Electronic with hollow or solid shaft can be integrated at almost any point of the power train. They measure position and speed with diverse redundancy and are certified for SIL3PL e applications. The measured values are evaluated directly in the device and transmitted via PROFIBUSPROFIsafe or PROFINETPROFIsafe. Safe position and speed values are thus available throughout the control chain. Special solid shaft versions with a pinion and positive connection between pinion and encoder shaft are available for use in wind turbines.

Communication is with PROFIsafe in the PROFIBUS or PROFINET network or with openSAFETY via Ethernet Powerlink.



CD_75_Serie.jpg

Absolute Encoders according SIL3/PLe CD_75M made by TR-Electronic



CD_75_Windkraft.jpg

Rotary encoders for safe pitch- and azimuth-control by TR-Electronic