

ENCODERS IN A COMMERCIAL WIND TURBINE APPLICATION

Background

Wind turbines have gotten larger and more powerful, making them competitive with convention fuel-fired power plants. Since they rely on wind, there are a lot of control surfaces (like an airplane) that need to be instrumented and adjusted for optimum performance. This is where incremental and multi-turn absolute encoders have a strong role to play.

Solution

Two of the most critical areas for correct operation of a wind turbine include “Yaw angle” – or the direction of the turbine relative to the wind direction, and blade pitch. Most modern wind turbines have the ability to rotate the blade around its major axis, which adjusts the pitch or “angle of attack” of the blade leading edge relative to the wind speed. This is analogous to a sailor being able to trim the sails of the sailboat in order to increase the speed of the boat. Wind turbines are heavy pieces of equipment so a lot of leverage or gearing is required to adjust blade pitch and yaw. This makes them ideal for multi-turn encoders.



In addition to the absolute encoder, incremental encoders are also used in the gear box to monitor the speed of the blade.

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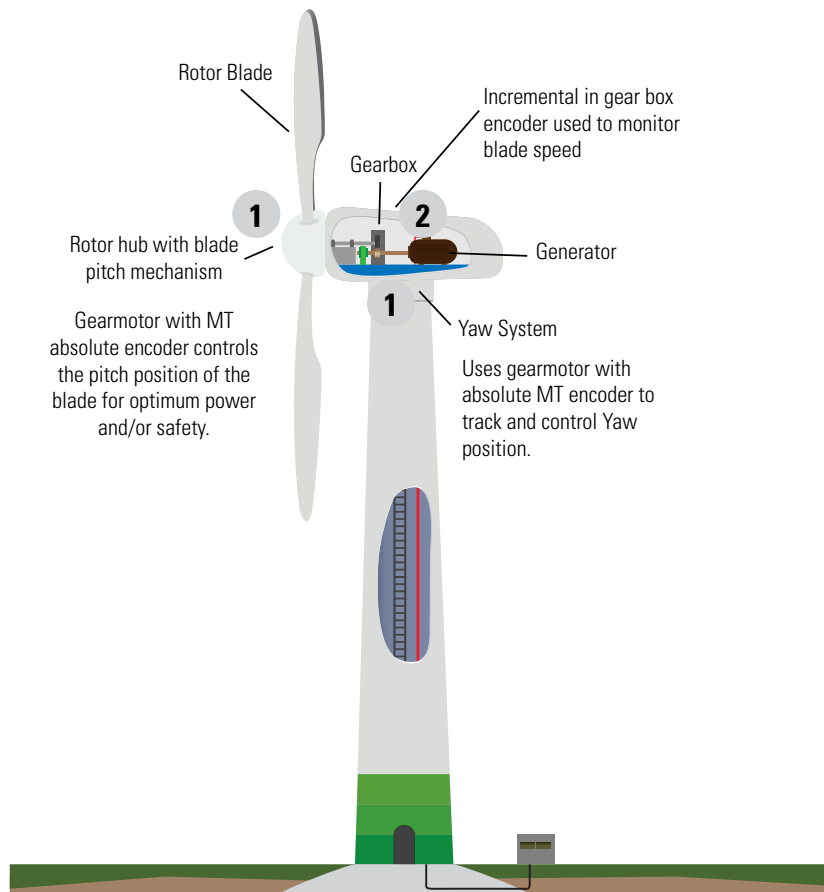


RECOMMENDED PRODUCTS

Reference on Diagram	Product	Type	Features	Part Number	Function	Brand
1	 MHM5	Shafted and Hollow-Shaft Encoder	Rotary Multi-Turn Absolute Output. Etherne/Ip Or Profinet Options	MHM5/MHK5 Family	Multi-Turn Absolute	BEI Sensors
2	 H20, HS20, H25, HS25	Shafted and Hollow-Shaft Encoder	High Accuracy Robust Design	H20 / H25 family	Incremental (Speed)	BEI Sensors



DIAGRAM



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