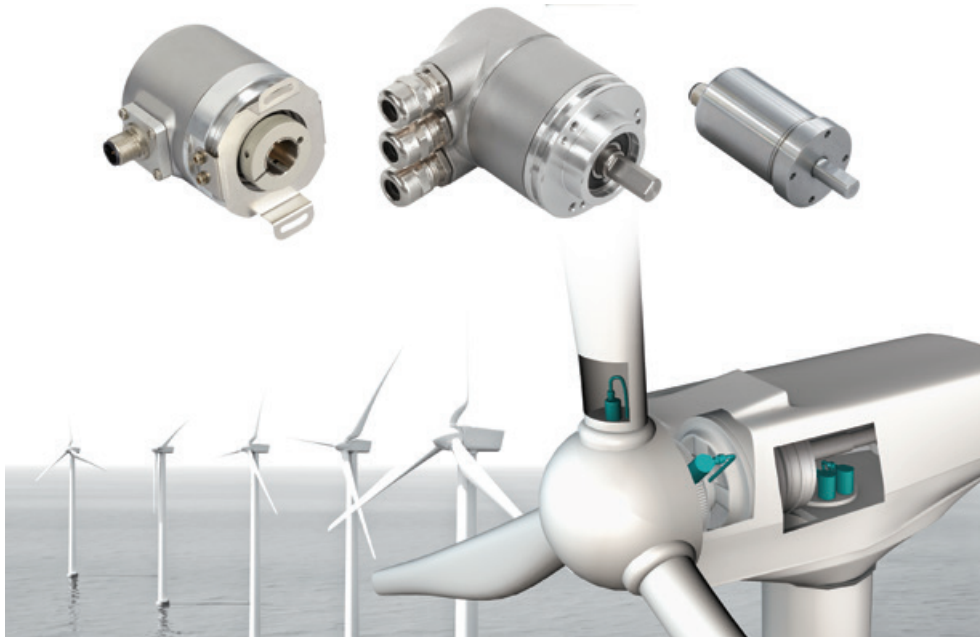




POSITION AND MOTION SENSORS



POSITAL in Windenergy

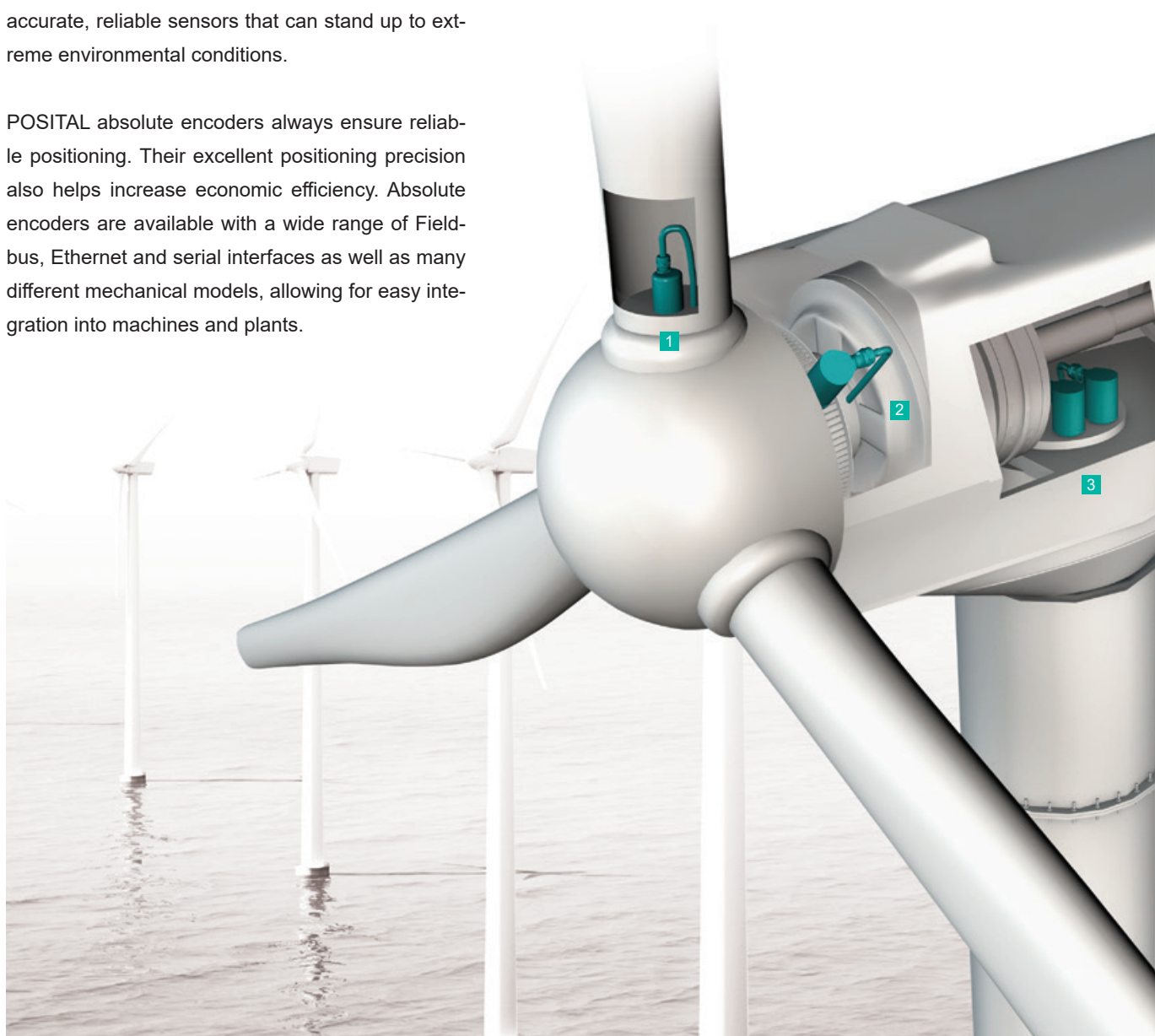
ROBUST, VERSATILE SENSORS FOR WIND TURBINES

Turning Into a Favorable Wind

There are several measuring and positioning tasks that must be handled efficiently in wind turbines: in addition to ensuring that the azimuth drives are able to keep the nacelle pointed into the wind, the tilt angle of the rotor blades must be monitored and continuously adjusted through a pitch control system. On top of that, speed control can be challenging under demanding environmental conditions. POSITAL offers an extensive one-stop range of accurate, reliable sensors that can stand up to extreme environmental conditions.

POSITAL absolute encoders always ensure reliable positioning. Their excellent positioning precision also helps increase economic efficiency. Absolute encoders are available with a wide range of Fieldbus, Ethernet and serial interfaces as well as many different mechanical models, allowing for easy integration into machines and plants.

Meanwhile, incremental encoders, which send out a series of pulse signals at a rate that is directly proportional to rotation speed, are ideal for speed control systems. Incremental rotary encoders feature a unique combination of high performance and rugged durability. They are available in a large variety and have a programming interface for maximum versatility.



APPLICATION EXAMPLES

1 Reliable Pitch Control

IXARC magnetic absolute encoders are used to precisely determine blade angles for the pitch control system. A high level of environmental protection is a key requirement here, since extreme conditions prevail especially in offshore wind turbine parks. With durable, salt-spray resistant IP69K housings and a shaft load capacity of up to 300 N, POSITAL absolute encoders are ideal for these tough conditions. Based on an innovative magnetic technology that does away with the need for gears or batteries, the encoders are very compact and easy to install in limited spaces.



> IXARC Absolute Magnetic Rotary Encoders

- Resolution up to 30 bit (16 bit per Revolution)
- Durable in Harsh Environments
- Compact and Robust Stainless Steel Housings
- Withstand shaft loads of up to 300 N
- Up to IP69K Environmental Rating

2 Durable Speed Control System

IXARC magnetic incremental encoders can provide an impressive combination of accuracy and durability for wind turbine speed control systems. POSITAL's reliable incremental encoders are available with environmental protection ratings of up to IP69K. They can be programmed to provide up to 16,384 pulses per revolution, with a choice of Push-Pull (HTL) or RS422 (TTL) communications interfaces. Resolution and interface parameters can be set quickly and easily through the use of POSITAL's UBIFAST programming tool.



> IXARC Incremental Magnetic Rotary Encoders

- Rugged, Reliable Magnetic Sensing Technology
- Compact Design, Optional Stainless Steel Housing
- Easy to Program with UBIFAST Configuration Tool
- Customize PPR to Your Application
- Programmable Output Driver (HTL/TTL)

3 Accurate Azimuth Feedback

IXARC absolute multiturn encoders with 30 bit total resolution are used to provide absolute position measurement for the azimuth control systems that adjust the orientation of the nacelle in response to changes in wind direction. In addition to high resolution, such applications also require sensors that can stand up to the mechanical loads that can be imposed when the nacelle structure is exposed to strong winds. Robust, tried-and-tested encoders ensure better reliability and operating safety, which helps users reduce downtime and the associated costs.



> IXARC Absolute Optical Rotary Encoders

- Resolution up to 30 bit (16 bit per Revolution)
- All Common Fieldbus and Ethernet Interfaces
- Compact Design, Optional Stainless Steel Housing
- High Shock and Vibration Resistance



OVER 50 YEARS EXPERIENCE WITH POSITION SENSORS



FRABA Group

FRABA is a group of enterprises focused on providing advanced products for the motion control and industrial automation markets. POSITAL has been a leading manufacturer of industrial rotary encoders for over 50 years and recently has expanded its business to tilt and linear motion sensors. Other FRABA Group subsidiaries include VITECTOR which focuses on protection sensors to guard doors and production machine covers. FRABA group is also an innovator in product design and manufacturing processes and a pioneer of Industry 4.0.

History

FRABA Group dates back to 1918, when its predecessor, Franz Baumgartner elektrische Apparate GmbH, was established in Cologne/Germany to manufacture relays. In 1973 FRABA introduced one of the first non-contact, optical absolute rotary encoders. Since then, the company has played a trend-setting role in the development of rotary encoders and other sensor products.

Service and Production

POSITAL has a global reach with subsidiaries in Europe, North America and Asia – and sales and distribution partners around the world. Products are manufactured in advanced production facilities. The computer-guided semi-automated production system tracks each device from order, through assembly and testing, to final delivery.

Stand Alone Encoder Business

POSITAL's unique online product finder is providing access to a huge variety of solutions without requiring specialized knowledge. Many hundred thousand specific datasheets are available in 11 languages and easy to browse. The traditional practice of customization has been replaced by this new approach to a large extent. Even with hundred thousands of unique configurations available, standard products are ready to ship within 5 working days.

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