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Solutions | FORJ |Slip ring and Rotary Unions for Oceanwings®


IncOder

Oceanwings® is a fully automated wingsail, enabling hybrid propulsion featurin wind power and conventional propulsion. To enable automation, the mast embe technologies such as strain gauges, thermocouples to monitor the structure and e but also servomotors to perform sail maneuvers. The wind propulsion concept c VPLP allows the wing to be automatically positioned depending on the wind di to benefits from the maximum performance of the system, all the time.

Thus, this means the mast can rotate continuously depending on wind and boat c has been made possible through the use of a slip ring that is installed in the mast transfer of servomotors power and feedback, monitoring sensors signals but also communication between the rotating equipment on the mast and the controller. T way Oceanwings® can perform smooth and reliable operations enhancing the en efficiency of the boat and comfort of sailing operation.

Moreover, an absolute encoder was also needed in order to retrieve the mast pos time which is very important information for the automation algorithm. PES S.A the slip ring design and provided a mounting interface for direct encoder integra easy integration of the slip ring/encoder assembly into the mast.

Electrical Features

- Motor power and control through specific cables
- Automation component supply and signals (I/Os, EtherCAT, Ethernet, Profinet, CANOpen, etc.)
- Sensors (low voltage signals transmission: strain gauge, thermocouples, etc.)

Mechanical Features

- Low friction torque
- Customized mounting options
- Compact size

Interesting Options

- IP65 for the maritime environment
- Integrated proprietary cables
- Integrated large thru-bore encoder
- Combined with hydraulic rotary union for high actuation power

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Advantages

- Long lifetime without maintenance
- Reliable continous rotation
- Highly customized solution (cable length, encoder integration, circuits, IP65, etc.)

Benefits

- Enhance the Total Cost of Ownership by avoiding difficult access maintenance operations
- Optimize Oceanwings® performances and simplify the automation algorithm
- Save on integration and installation costs

Facts & Figures

- With a **medium speed of 5 rpm** a slip ring (multi-wire brushes design) can operate at least **20 years** without being replaced
- **Power signals** and **sensors or control signals** (Field bus, motor encoder, etc.) can be embedded in the **same slip ring**
- Oceanwings® are now proven-in-use in very harsh environmental conditions, Energy Observer has joined the Spitzberg and crossed the Atlantic Ocean giving Oceanwings® thousands of miles of operation