Helping To Revolutionise Marine Transport and Reduce Emissions

Working with a company developing rotor sails for marine transportation to revolutionize the industry and reduce emissions

Background

Our client is a developer of Rotor Sails – an energy-saving technology for the maritime industry that harnesses wind energy to provide auxiliary propulsion to vessels. The reduced fuel consumption significantly reduces carbon dioxide and other emissions. While maritime transport is one of the most energy-efficient modes of transport, it represents a growing share of carbon emissions.

Rotor sails are rotating vertical cylinders that harness the Magnus effect – where a pressure gradient is created by a spinning object (ball or cylinder) as it moves through air. On a ship, this pressure gradient can be used to provide a forward propulsive force. The rotation of the rotor sail is provided by an electric motor, typically installed within the cylinder. For ships carrying flammable cargoes, for instance, oil or gas tankers, this motor and associated system controls require protection and certification.

Project Brief

Develop a motor purge system and associated controls enclosure for a Zone 1 hazardous area that would be suitable for installation inside the rotor sail tower. If possible, a single purge system would be used to purge both the braking motor and control enclosure.

Outcome

A feasibility study was conducted and, while combining purge systems was technically possible, it would complicate the certification process. After further discussion, it was agreed to proceed with 2 separate systems. This would also permit the control system to be located elsewhere if required.

A custom motor purge system was developed, combining technologies from several different Expo products, but still within the scope of Expo's MiniPurge certificate. This was important as the motor OEM was already familiar with our standard purge systems, simplifying the certification process.

A custom 2-door control enclosure was designed and built with its own purge system. After fit-out by the client, Expo carried out an inspection and issued IECEx zone 1 certification under our populated enclosure certificate.

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Expo Products and Services

Custom Enclosure Service

Some projects call for special shapes and sizes of enclosures, non-standard features, or very special applications, and may also require input from a Notified Body during the design phase or final certification.

With Expo's fully custom process, a dedicated engineer will work with you to develop exactly what you need and agree on a detailed budget and project timeline with milestones. As this is a highly flexible service, we can adapt the plan if your project requirements change.

Click here for more information.

Design & Consultancy Services

Expo Technologies' team of consultants and certification engineers have the experience and knowledge to support our customers through the certification process for equipment to be used in Hazardous Areas.

From concept design through to maintenance, Expo Technologies works with you to reduce the risks and accelerate your entry into global markets.

Click here for more information.

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