

advancing

protecting

ensuring the future

OASYS GROUP
RENOVABLES Y ESPECIALES

Since 1960



OASYS GROUP, a pioneer company in developing and supplying innovative solutions, designs and manufactures fire-fighting systems for specific sectors. We have a wide range of specialized products and services, as well as an unbeatable technical team that will design the most suitable solutions to protect your facilities and equipment. The success of our products is the result of our proven track record in the research and development of solutions to fight any type of fire.

OASYS GROUP introduces the **OrWind** systems for fire protection in wind turbines.

Fire protection in the wind power industry involves meeting four major needs:

- **Innovating and developing technical solutions**, incorporating systems to detect and extinguish fires in special applications and particularly difficult conditions.
- **Protecting the environment**, avoiding the impact of fires on the natural world.
- **Ensuring the future of clean and renewable energies**, by generating positive expectations that enable progress on all fronts.
- **Guaranteeing the confidence of investors and other financial and social partners**, allaying uncertainties associated with fires.

The **OrWind Xaloc** system for protecting the nacelle and highly-ventilated confined spaces in wind turbines.

Since wind turbines are full of equipment and components with specific functions in controlling, processing and transforming energy, there is a significant fire risk due to the high levels of power they need and process, and also their large concentration of circuitry and electrical components.

The **OrWind Föhn** system for protecting the converter, power and control cabinets in wind turbines.

Electrical cabinets statistically represent one of the highest fire-risk components in wind turbines. High ventilation ratios also pose a challenge in the design of an effective fire detection and extinguishing system.

ADVANTAGES

Highly effective

Small

Quick installation

Easy to maintain

Perfect integration



Detection module

The normal strong wind conditions which wind turbines operate in are unique and involve an extraordinary challenge for conventional equipment when searching for an effective fire-detection system. In these situations, aspiration technology with highly-sensitive detection is the most suitable alternative for detection modules.

Action in incipient stage

Taking into account the specific type of fires that break out in nacelles-characterized in their incipient stage by the presence of smoke-highly-sensitive programmable smoke detection equipment is needed to ensure fires are detected in their initial phase and do not reach stages with higher associated damages.

Intelligent control

The presence of smoke or other external pollutants, combined with the highly-sensitive equipment, could cause false alarms. The "self-learning" function enables constant regulation of alarm levels based on ambient conditions. A network is established via Ethernet connecting all the fire-detection devices in the turbines to a remote point where they are all monitored and controlled automatically.

The combination of both the above characteristics establishes an optimum alarm level which emits signals relating to the general shutdown of the turbine and the activation of the extinguishing module.

Specifications and Characteristics

- Aspiration high-sensitivity smoke detection (HSLD system)
- Various programmable alarm levels
- Voltage-free relays for signaling alarms, pre-alarms and failures
- Monitoring of aspiration flow
- Ethernet connection for device monitoring and control
- Large memory for logging events
- Batteries for autonomous operation

Auxiliary modules

- Network regulation of alarm levels
- LOTO system
- Climate control modules for extreme temperatures: -30°C to 60°C

Extinguishing module

The clean agent G1 used belongs to a family of new gases and represents a step forward in the development of these technologies. It provides additional advantages compared with other more common gases. The main ones are that it is harmless to people, it does not harm the environment, it is not an electrical conductor, and it needs nothing more than ventilation to be removed.

After being released, it does not leave any residue that could corrode turbine components, thus eliminating all possibilities of damaging equipment further after a fire. Consequently, it lowers repair costs and shortens service restoration times. The working temperature range is very broad and exceeds the limit temperatures usually required in this industry.

The agent acts by absorbing heat due to a chemical reaction, not by displacing oxygen. This means the fire is extinguished quicker, so less gas is needed. Once the gas is released, it completely fills the volume to be protected, thereby protecting all the space. Subsequently, it manages to act against the fire, regardless of where or how far away it is located.

The system has a pressurized container which keeps the gas at low pressure. The agent is released automatically after receiving a specific signal from the detection module. The gas is released through a circuit and distributed so that it reaches everywhere in the risk.

This system is the best solution when seeking fire protection based on rapid and effective fire suppression.

Specifications and Characteristics

- Highly effective
- Harmless to people and environmentally friendly
- Does not damage electrical devices
- Low working pressure
- Small and completely integrated in the turbine
- Gas container dimensions can be adapted to available space
- Configuration of components and release points can be based on wind turbine use and model
- Indicator to signal empty cylinder



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