

WIND TURBINES



FSH DIRECT GAS EXTINGUISHING SYSTEMS

Wind turbines are an integral part of the alternative energy conversation that is taking place globally. They provide sustainable, clean energy, generated in remote locations where they provide minimal disruptions for human populations. They are a step in the right direction for future generations, so they deserve to be protected with a next-generation fire suppression system: **FSH DIRECT BASIC** series.

Fire is always going to be a factor when you have electrical components and hydraulic fluids in the same area. The remote nature and extreme height of the turbines renders traditional fire protection and extinguishing methods ineffective. A fire often meant total destruction of the unit. Add to that the clean-up and down time, and now we are looking at a catastrophic loss.

FSH DIRECT BASIC mitigates that risk by providing protection right at the source of the hazard. The response is both automatic and rapid assuring that a small fire within the electrical cabinet doesn't turn into a large one encompassing the entire nacelle. It's pro-active protection in an industry that is pro-actively securing a safe future for the people of this planet.



Compatible components



Manual Actuator



Pneumatic
Detection Tubing



Integrated
Manual Actuator



AUTONOME BLUSGASSYSTEMEN
AUTONOMOUS FIRE EXTINGUISHING SYSTEMS

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FSH DIRECT offers three customized options for wind turbine protection.

FSH BASIC utilizes advanced pneumatic detection tubing, a multi-functioning line that detects heat, creates a nozzle in the tubing and discharges Novec™ I230 out of the formed nozzle. This system is pressurized at 240psi (16.5 bar) and the advanced pneumatic detection tubing has a burst point of 248°F (120°C) or 356°F (180°C), which allows for a higher evaporation rate and faster discharge/extinguishing time over traditional 195psi (13,5 bar) systems. The tubing is routed through the wind turbine's electrical cabinet for optimal detection, and will burst at the rated temperature if a fire should occur. Once this happens, the Novec™ I230 fluid is discharged through the nozzle formed in the tubing for rapid extinguishment.

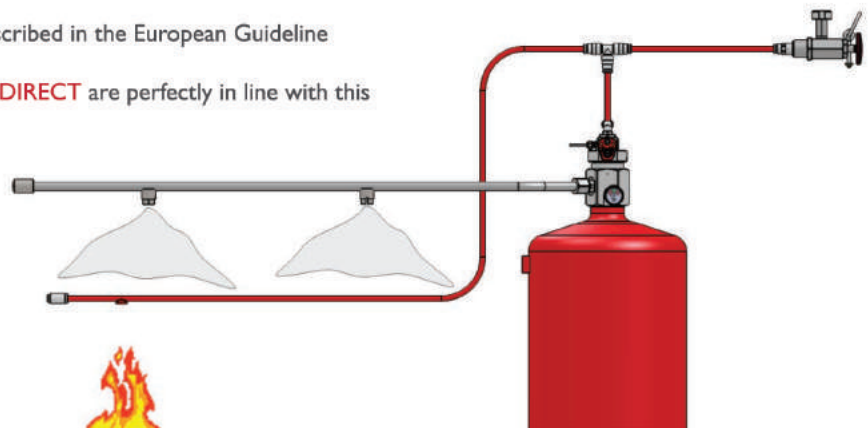
FSH BASIC PLUS, available in pneumatic and electrical versions, also uses the advanced pneumatic detection tubing.

In addition, the **BASIC PLUS** and **BASIC MAX** versions utilize a pipe network with nozzles. The electrical option, **BASIC MAX**, offers selections of linear heat wire, smoke detectors, and air sampling equipment. When one of the above options detects heat or smoke, a signal is sent to activate the **FSH BASIC** system. A pressure switch is available for system monitoring or equipment shut down, and is recommended for example to prevent reignition.



Fire safety for wind turbines is described in the European Guideline CFPA-E No 22:2012 F.

The extinguishing systems of **FSH DIRECT** are perfectly in line with this guideline.



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