

Automatically switch navigational lights and audible warning systems in poor visibility . . .

. . . whilst keeping light and noise pollution to a minimum



for accurate and reliable measurement of visibility at both land based and coastal wind farms to switch equipment automatically

Biral HSS VF-500 Visibility / Fog Sensor

Wherever wind turbines are a possible danger to shipping or aircraft due to poor visibility the HSS VF-500 sensor provides a cost-effective solution for switching lights and audible alarms.

The HSS VF-500 visibility sensor continuously monitors the atmospheric extinction coefficient, and thus visibility, in all weather conditions. The sensor features a fog-alert capability which automatically switches external equipment such as warning lights and foghorns whenever fog, rain, smoke or dust lowers the visibility to a predetermined value.

The sensor has a proven track record and will operate for many years with minimal maintenance, incredible accuracy (industry best) and is reliable and durable enough to allow a fit and forget mentality. Originally designed for the military over 20 years ago the HSS sensors are used throughout the world, indeed many of the original sensors are still being used 24/7 in critical operation.

A single HSS VF-500 visibility sensor, on a wind farm, or one on each corner of larger wind farms, will:

- switch warning light systems and foghorns automatically and ONLY when necessary.
- monitor and adjust the intensities of aircraft navigational warning lights.

Noise and light pollution will therefore be kept to a minimum thus reducing disturbance to local residents' and environmental groups. The power requirements are also kept low as the sensor only switches on warning systems when required and switches them off as soon as visibility has improved to a safe, user defineable level.

The sensor is unaffected by interference from surrounding light sources and operates continually day and night. The sensor is ideal for both land-based and offshore wind farms.

The Biral HSS VF-500 Visibility Sensor is designed for many years of trouble free service

The sensor uses an infra-red light-source and intelligent sensing technology which means that measurements are unaffected by nearby light sources. This infra-red light-source has a life expectancy exceeding 10 years and with a MTBF (Mean Time Between Failure) of at least 8 years the HSS sensors are extremely reliable. The sensor also has several other features designed to prevent measurement problems or malfunctions due to severe environmental conditions. These include the design and construction of the viewing windows, the selection of industrial and military grade electronic components that withstand environmental extremes and the optional de-icer hood heaters for operation in temperatures as low as -50 C.

A robust, waterproof housing covers the electronics with neoprene O-rings used to provide watertight seals. The sensor unit has an ingress protection rating of better than IP66 and all components that are exposed to weather are salt-dip brazed and made of hard anodized aluminium. This provides long life, extreme accuracy and repeatability together with unparalleled corrosion protection in harsh environments.

The maintenance requirements for the HSS VF-500 are minimal with only periodic wiping of the windows necessary to remove any contaminants.

The sensor has very low power consumption and can be mains or battery operated. It is ideal for use with solar power and therefore suitable for operation at remote locations.

The low weight and compact construction of the sensor allows for one man installation. The sensor can be located at the base or on the top of the turbine or even a short distance from it and can be set to switch at one or several different visual ranges all of which are user adjustable for distance and time settings. Being a forward scatter sensor it is far easier to site and not prone to the interference that back-scatter sensors experience.

The HSS VF-500 consists of a sensor head which makes the measurements and a control box which houses the electronics. The sensor head and control box can be installed up to 20 metres apart if required (sensor head to measure accurately and control box to be convenient to service personnel).

A true test of quality and reliability is the fact that Biral HSS sensors were the first forward scatter visibility sensors on the market and have a proven track record for use both at sea or on land. The VF-500 is the sensor of choice in many locations and is used extensively on lighthouses around European and USA coastlines to switch fog horns.

All HSS sensors are assembled at our headquarters in England to rigorous ISO 9000 accredited quality standards and can be customised to suit your specific application if required.

If you would like more information please contact the Met Team at the address below by telephone, fax or email.



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Biral HSS VF-500
Visibility Sensor
with Power Control Unit