

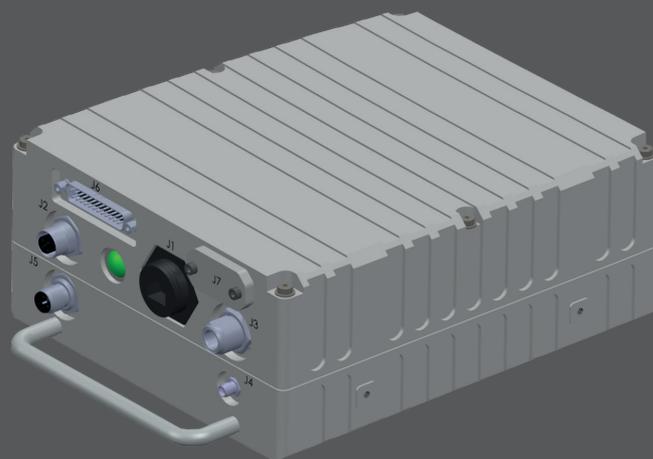
HENSOLDT AirSentinel

Aircraft Detection System

No compromise between flight safety and serenity of the neighbourhood.

Wind farm areas are sensitive spots for air traffic and are therefore signalled by flashing lights atop of wind turbines during the night. Those lights are making the acceptance of new windmills complicated because of the inconvenience caused to the residents.

With a proven track record in air traffic management, HENSOLDT has developed a sensor dedicated to the Aircraft Detection Lighting System (BNK) in order to switch on the lighting system only when necessary for the preservation of the environment around the power generators.



AirSentinel - Aircraft Detection System

Operational

Based on the passive reception of ADS-B signals transmitted by aircraft, AirSentinel can be used in new wind turbine projects or as a retrofit for existing installations. It is compatible with all existing lighting systems and is able to match current and future legal requirements without any modification of the system architecture. All aircraft detections are time-stamped and recorded in case of enquiry. Thanks to its large coverage radius, AirSentinel can be used for one single turbine or for a complete wind farm in order to reduce and mutualise costs.

Use cases

For wind farm developers, lighting system suppliers or maintenance operators, AirSentinel is the ideal solution for:

- Acceptance of new wind farms by local communities
- Compliance with new regulations and recommendations
- A fast and easy retrofit solution of existing installations to upgrade to new standards
- A redundant solution to radar for higher safety in critical areas
- Places where a radar is not possible because of local regulations, neighbourhood, EMC constraints, Airport etc..

Installation

AirSentinel is a turnkey solution implemented directly in the nacelle for easy installation and maintenance operations. No particular training is required, and thanks to its high MTBF, military-based design and embedded self-diagnosis, low periodic maintenance operation is required: 20 years of operation can be ensured in a row.

Technical Data

Operational	
Aircraft messages receiver	Passive RF system detecting mode A/C, Mode S, ADS-B squitter 1.090 ±0,5 MHz frequency
Parameters	Protected zone easily configurable anytime (range, height, signal strength, timings, counters etc.)
Implementation	Modular implementation of the receiver (inside the nacelle, on top of a high building or pylon etc.) Antennas installed outside
Interfaces	
Ethernet 10/100T IEE802.3	TCP/IP, Modbus, ASTERIX
Inputs/Outputs	Inputs: Ethernet, luminosity probe, RF antenna, GPS antenna, power supply Output: TURN OFF signal, failure status
Antennas	1 RF channel, 1 GPS channel (optional)
Sensors	External luminosity sensor (optional)
Power supply	24V DC – low electric consumption
Performance	
Cylindrical detection zone	25 km radius, 1 km height
Standards compliance	German Authorities Regulations BMVI-LF15-20200424-SF-A006 CE marking REACH regulation No. 1907/2006 European RoHS directive 2002/95/CE
Environmental qualification	IP66, C4H corrosion resistance Critical environment adapted (military-derivative product): <ul style="list-style-type: none">• -40 °C to +70 °C temperature range• shock, vibration, salt, dust resistant
Electrical qualification	Conducted emissions, electrostatic discharge
Reliability	High MTBF Low false alarm rate 180 days logging time
Duration and maintenance	20 years lifetime Housing gasket to be changed after 10 years as preventive maintenance The software can be easily updated via the tablet
Physical characteristics	
Weight and dimensions	4 kg – 187 x 94 x 250 mm (width, height, depth)
Compact housing	6 interfaces and 1 LED on front panel 1 handle and multiple tapped holes for fastening
Accessories	
Tablet	Configuration, system update and activities follow up
Antennas	RF antenna, GPS antenna and cables