



# HENSOLDT AirSentinel

## Aircraft Detection System

**No compromise between flight safety and serenity of the neighbourhood. Minimise lighting time at night.**

Under civil aviation regulations, wind farms are marked by obstruction lights during the night. The multiplication of such lights at night is causing increasing inconvenience to the neighbourhood.

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



# AirSentinel - Aircraft Detection System

Large coverage area with single sensor – adjustable detection radius – very low proven lighting time

## Operational

Based on the passive reception of transponder 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
- Can be used standalone or as redundant solution to radar for higher safety in critical areas
- Benefits of a passive system where a radar solution is not possible because of local regulations, neighbourhood, EMC constraints, airport etc.

## Installation

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

## Technical Data

Operational	
<b>Aircraft messages receiver</b>	Passive RF system detecting mode A/C, Mode S, ADS-B squitters
<b>Parameters</b>	Protected zone easily configurable anytime (range, height, signal strength, timings, counters etc.)
<b>Implementation</b>	Plug and play Modular implementation of the receiver (inside the nacelle, on top of a high building or pylon) Antennas installed outside
Interfaces	
<b>Communication protocols</b>	TCP/IP, Ethernet, Modbus, ASTERIX
<b>Inputs/Outputs</b>	Inputs: Ethernet, luminosity probe, RF antenna, GPS antenna, power supply Output: TURN OFF signal, failure status
<b>Antennas</b>	1 RF channel, 1 GPS channel (optional)
<b>Sensors</b>	External luminosity sensor (optional)
<b>Power supply</b>	24 VDC, 15 W
Performance	
<b>Cylindrical detection zone</b>	Configurable radius, typical 25 km, 1 km height
<b>Standards compliance</b>	German Authorities Regulations BMVI-LF15-20200424-SF-A006 CE marking REACH regulation No. 1907/2006 European RoHS directive 2002/95/CE
<b>Environmental qualification</b>	IP66, C4H corrosion resistance Critical environment adapted (military-derivative product): <ul style="list-style-type: none"><li>• -40 °C to +70 °C temperature range</li><li>• shock, vibration, salt, dust resistant</li></ul>
<b>Electrical qualification</b>	Conducted emissions, electrostatic discharge
<b>Reliability</b>	High MTBF Low false alarm rate (minimum lighting time) 180 days logging
<b>Duration and maintenance</b>	20 years lifetime, maintenance intervals 12 months Visual checks, no specific maintenance
Physical characteristics	
<b>Weight and dimensions</b>	4 kg – 187 x 94 x 250 mm (width, height, depth)
<b>Compact housing</b>	6 interfaces and 1 LED on front panel 1 handle and multiple tapped holes for fastening
Accessories	
<b>Tablet</b>	Configuration, system update and activities follow up
<b>Antennas</b>	RF antenna, GPS antenna (optional) and cables