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# AeroSense MetStation

*Aerodrome and Heliport Weather Station*

## Precision Aviation Meteorology for Safe and Reliable Flight Operations

### Designed for Aviation Safety

Built specifically for aviation operations, the system provides continuous, real-time weather intelligence to support safe takeoff, landing, and flight decision-making.

- ICAO Annex 3 compliant design
- Compliant with WMO No. 8 Meteorological Standards
- Engineered for Continuous 24/7 Operation

## Overview

### High-Performance Aerodrome and Heliport Weather Monitoring System

A reliable and advanced weather monitoring solution designed specifically for aviation safety applications. The system is developed in compliance with ICAO Annex 3 and WMO No. 8 standards.

The system integrates a high-capacity data logger that powers all connected sensors, performs real-time data acquisition and processing, and enables remote monitoring via LAN or Internet connectivity. The AeroSense web-based software platform provides real-time data visualization, statistical analysis, and historical trend reporting. In addition, optional local HMI displays can be installed to provide on-site real-time data and trend visualization.

### Rugged All-Weather Construction

Engineered for harsh operational environments, the system ensures uninterrupted performance in extreme weather conditions.

- Compact, space-efficient enclosure design
- Corrosion-resistant, industrial-grade materials
- Fully sealed weatherproof housing (dust and moisture protection)
- Optional automatic sensor heating below +4°C
- Ice and snow protection for continuous accuracy

***Built for Reliability. Designed for Aviation***

*From small heliports to international aerodromes, this system delivers trusted meteorological intelligence where accuracy matters most.*

## Sensor Flexibility and Measurement Capability

The system supports a wide range of aviation-grade sensors, including:

- High-accuracy ambient air temperature and relative humidity sensors
- Ultrasonic and propeller-type wind speed and wind direction sensors
- Dual-cell barometric pressure sensors for precise QNH and QFE measurements
- Visibility and present weather sensors
- Heated precipitation (snow) gauges for extreme cold and snow-prone environments
- Lightning detection systems
- Cloud height (ceilometer) measurement systems
- Snow depth monitoring sensors
- Runway temperature sensors
- Runway condition monitoring sensors

This flexibility ensures reliable and accurate performance across diverse climatic and operational conditions, supporting safe and efficient aviation operations.

## Smart Data Acquisition & Real-Time Monitoring

At the core of the system is a high-capacity data logger that powers all connected sensors and performs advanced data processing in real time.

- High-Speed Multi-Sensor Data Acquisition
- Real-Time Processing and Logging
- LAN and Internet Connectivity for Remote Access
- Seamless Integration with Aviation Networks

## Multitude of Applications

Its outstanding versatility makes it ideal for all kinds of applications, the main ones being:

- Civil and Military Aviation Facilities
- Aerodromes, Airports, and Airfields
- Heliports and Hospital Helipads
- Offshore and Remote Operations
- UAV and Drone Applications
- Emergency and Temporary Landing Zones
- Aviation Events and Training Facilities

## Recommended Equipment Matrix

| Sensor / Parameter | Heliports | Small Aerodromes | Military Aerodromes |
|---|---|---|---|
| Wind Speed and Direction | Mandatory | Mandatory | Mandatory |
| Temperature and Humidity | Mandatory | Mandatory | Mandatory |
| Dew Point | Mandatory | Mandatory | Mandatory |
| Atmospheric Pressure (QNH and QFE) | Mandatory | Mandatory | Mandatory |
| Precipitation | Recommended for safety | Recommended for safety | Strongly Recommended |
| Cloud Base / Ceilometer | Optional | Recommended for safety | Mandatory |
| Visibility (MOR) | Strongly Recommended (night ops) | Mandatory (for METAR) | Mandatory |
| Present Weather | Optional | Optional | Strongly Recommended |
| Lightning Detection | Optional | Optional | Strongly Recommended |
| Runway Temperature | Optional | Optional | Optional |
| Runway Surface Condition | Optional | Optional | Optional |
| Snow Depth | Optional | Optional | Optional |

For comprehensive details, visit: www.buraq.com/aerosense-metstation

## Operational Benefits & Key Features

- Improved flight safety
- Reduced weather-related delays
- Reduced manual observation workload
- Enhanced pilot and ATC situational awareness
- ICAO-compliant weather reporting capability
- Automated METAR generation
- Remote diagnostics and maintenance
- Low power consumption for off-grid deployment
- Real-time alerts and notifications
- Scalable architecture for future expansion
- Historical trends and analytics
- Local and cloud deployment
- Multi-protocol communication support

## Connectivity & Remote Monitoring

AeroSense offers multiple communication interfaces to ensure reliable and continuous data transmission to monitoring servers. It supports connectivity through Ethernet, Fiber Optics, Wi-Fi, Radio Modems, and 4G networks, providing flexibility for different installation environments.

The system can be deployed with either local servers or cloud-based infrastructure, allowing AeroSense software to support both on-site monitoring and secure remote access. The station also supports solar panel and battery power systems for reliable operation in remote or off-grid locations.

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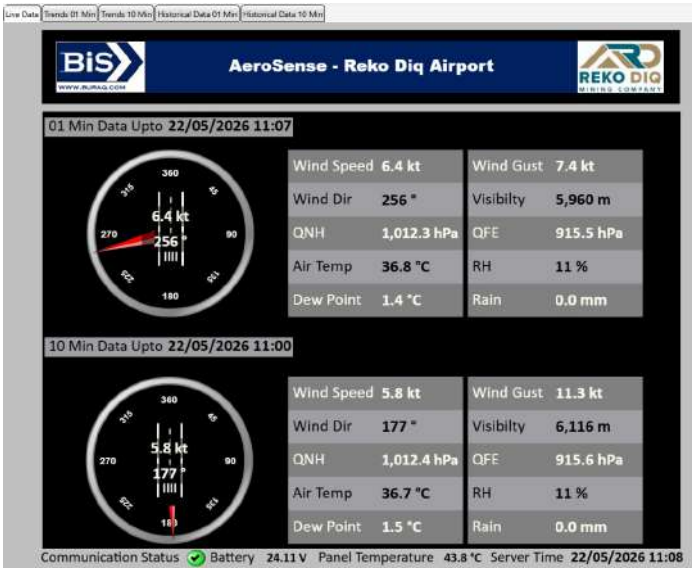
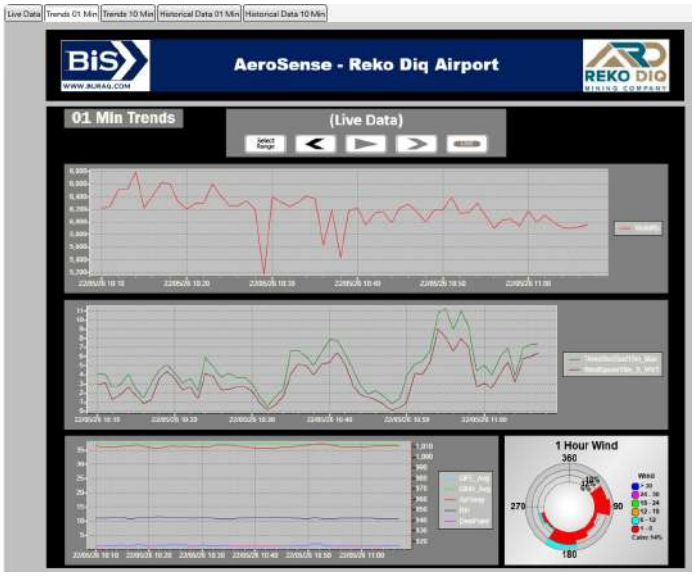
## AeroSense – Advanced Aviation Weather Monitoring Software

**AeroSense** is a real-time aviation weather monitoring platform designed for aerodromes and heliports, providing continuous access to critical meteorological data through an intuitive, modern dashboard. It displays key parameters such as air temperature, relative humidity, dew point, QNH, QFE wind speed, wind direction and gusts, visibility, present weather, and rainfall, along with live 1-minute and 10-minute trend analysis. The system is designed to support Air Traffic Control (ATC) personnel and meteorological observers in quickly assessing changing weather conditions and making informed operational decisions.




In addition to real-time monitoring, AeroSense offers powerful historical data storage, statistical analysis, and graphical trend visualization, enabling deeper insight into weather patterns and operational conditions over time. The web-based platform allows secure remote access from any location, ensuring uninterrupted situational awareness for aviation and meteorological operations.




For enhanced site-level usability, optional local HMI display units can also be integrated, providing real-time data visualization directly at the station or control center. AeroSense combines real-time acquisition, historical intelligence, and advanced analytics to deliver a reliable and comprehensive aviation weather monitoring solution.

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## Real Field Installations

Lightning Detector

Ultrasonic Anemometer Mounted on a Frangible Mast


Visibility and Luminance Sensor


Ceilometer

Server

Field Data Collection Unit

Lightning Detector,
RVR and Rain Gauge

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