Small Airports – Big Weather

VAISALA

Small Airports – Full-Size Needs

Small airports need a high-quality weather system for a simple reason – they share exactly the same weather with the large ones.

Vaisala brings industry-leading quality, reliability and experience to small airports and heliports. An automated weather system optimized for the limited resources of small operators, but delivering performance even in the "biggest weather".

The Vaisala AviMet® Small Airport System provides continuous, real-time weather information and reports for pilots, airport operators and other users. It is an automated professional weather solution enabling non-ICAO categorized airports and heliports to improve their safety and operational efficiency.

Automated Safety, Service and Savings

The primary function of a weather system at a small airport is naturally to ensure safer aviation by providing pilots with reliable weather information. However, with Vaisala AviMet® Small Airport System's added safety and information quality, the whole airport's service level raises to a new level – increasing traffic and boosting business.

By being fully automated with minimum maintenance needs, the Vaisala AviMet® Small Airport System also reduces workload and helps keep personnel and other costs at a minimum.

Understanding the operational realities of small airports, we have built an automated, easy-to-install package. No extra skills or expertise are required for its operation or maintenance.

Easy Operation

The system provides pilots with an easy access to accurate weather information before take-off and landing. Weather conditions can be checked already at home or at the airport via a web interface or telephone. When preparing for approach, the pilot can receive atmospheric pressure, wind speed and direction, as well as other parameters from the ATC or through an optional aviation radio.

Standard Parameters

- Wind speed and direction (gust and squall)
- Atmospheric pressure (QFF, QFE, QNH, pressure tendency)
- Air temperature and humidity (dew point)

Optional Parameters

- Cloud height and cloud coverage
- Visibility and present weather
- Lightning
- Web camera

Quality is the Safest Economical Solution

Although a small airport system, it consists of only original, industry-leading Vaisala sensors and algorithms to guarantee best performance and durability. Exactly the same core technologies as in the large, globally proven Vaisala systems, with configurations optimized for small airports.

Using the best technology is essential for all airfields and planes – both big and small – because accurate and reliable aviation weather information is about people and their safety.

The Vaisala Avimet® Small Airport System is a pre-optimized package for easy installation and carefree operation, providing high-quality weather data without needing airport-specific tailoring.

System Configuration

The system set-up consists of a single, robust central mast that accommodates all the sensors and processing units. The package includes everything you need to be able to operate the basic system. Only electricity, an Internet connection (if specified) and basic indoor computer equipment needs to be provided. The user interface operates on standard web browsers, such as IE, Firefox and Google Chrome.

System components
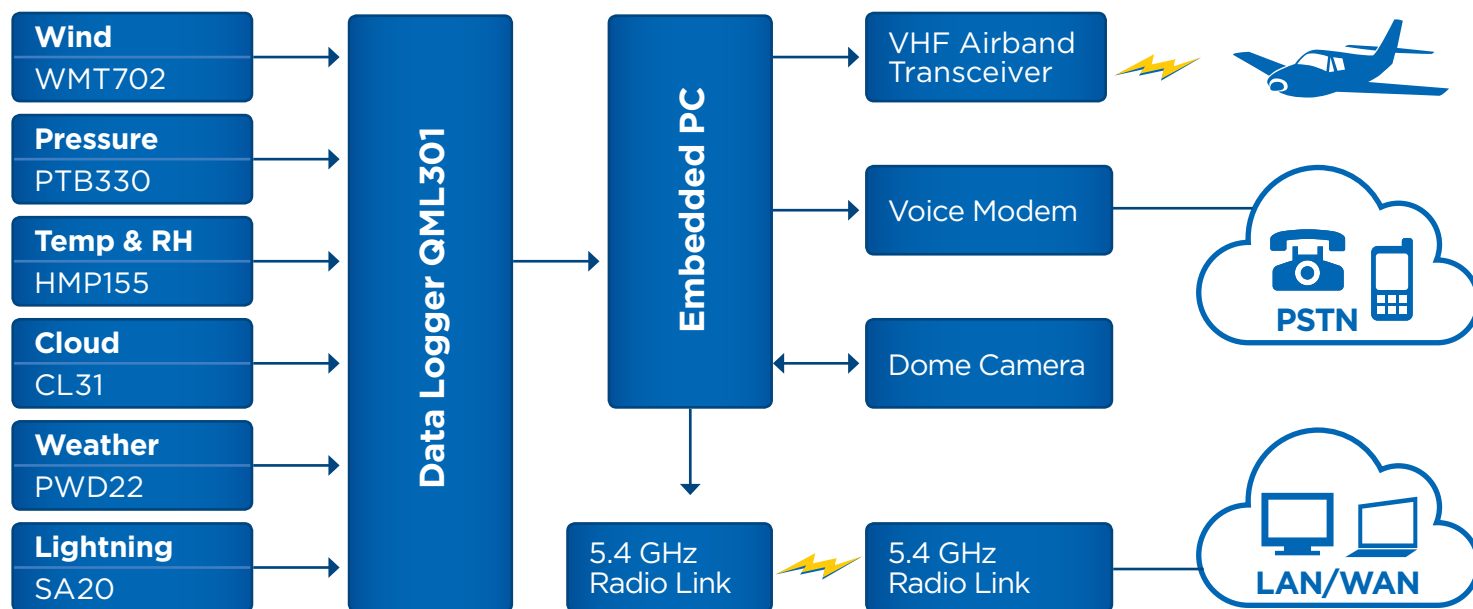
Sensors

Vaisala WINDCAP® Ultrasonic Wind Sensor WMT700
- Measures wind speed and direction
- Measurement range up to 75 m/s
- Data output rate 0.25 s
- Heating up to 150 W
- Self-diagnostics and validation
- Max. 3600-second average
- IP66 and IP67
- Maintenance-free
- Wind gust calculated according to the WMO guidelines
- Data format outputs: polar coordinates and vectors
- Fully compensates effects of temperature, humidity and pressure
- Patented three-transducer layout provides accurate data

Vaisala WINDCAP® Ultrasonic Wind Sensor WMT700 is maintenance-free, with no moving parts, and the patented three-transducer layout provides accurate data in all wind directions.

Vaisala HUMICAP® Humidity and Temperature Probe HMP155 with the new HUMICAP®180R sensor improves long-term stability and decreases the need for calibration. The optional warmed humidity probe is designed for high humidity environments.

Vaisala HUMICAP® Humidity and Temperature Probe HMP155
- Measures temperature and humidity
- Vaisala HUMICAP®180R sensor - superior long-term stability
- Plug-and-play
- Chemical purge
- USB connection for service use
- Installation kits for DTR13 and DTR502 radiation shields and also for a Stevenson screen
- Weather-proof housing IP66
- New, fast temperature probe
- Different output possibilities: voltage, RS-485, resistive Pt100

Vaisala BAROCAP® Digital Barometer PTB330 enables accurate climatological measurements with added reliability through redundancy.

Vaisala BAROCAP® Digital Barometer PTB330
- Measures atmospheric pressure
- Accurate measurement
- Excellent long-term stability
- Added reliability through redundancy
- Graphical trend display with 1-year history data
- Altitude corrected pressure (QFE, QNH)

Vaisala Ceilometer CL31
- Measures cloud height and coverage
- Second generation of advanced single lens optics for excellent performance also at low altitudes
- Reliable operation in all weather: unsurpassed performance in vertical visibility and cloud detection during precipitation
- Fast measurement enables detection of thin cloud layers below a solid cloud base
- Modular design for easy installation and maintenance
- Extensive self-diagnostics with fault analysis
- **Approved and deployed by the US-FAA Selected by the National Weather Service of USA**

Vaisala Present Weather Detectors PWD22
- Accurate, traceable measurement of prevailing visibility
- Detects precipitation type
- Measures the intensity and accumulation of precipitation
- Estimates snow accumulation
- Indicates the cause of reduced visibility
- Robust and dependable
- Weather-proof design reduces need for maintenance

Easy to install, easy to integrate

Lightning SA20
- Lightning/Thunder storm detection
- Range 0 to 90 km (0 to 50 Nm)
- Bearing 0° to 360°
Resolution
- Range 2 km (1 Nm)
- Bearing 1 degree
Detection
- 90 % of all thunderstorm activity within 20 km (10 Nm) of the SA20
- 80 % of all thunderstorm activity within 55 km (30 Nm) of the SA20
Standards
- FAA Advisory Circular 150/5220-16
- RTCA/DO-191
- TSO-C110a

Features

The weather data is available in a visual web format, ATC transmission or as audio messages through an optional VHF radio or telephone.

Data output

As data output, the system provides basic weather parameters in a non-editable METAR-type format. The data can be linked with a central station and networked with other users via a separate networking infrastructure not included in the package.

Aviation radio option

With an aviation radio, the landing pilot clicks the radio tangent three times to hear an automated weather observation. At somewhat larger small airports, the ATC usually provides the information based on standard weather observation. Aviation radio is optional as customers' operational preferences vary.


Interfaces

Connection to telephone network (PSTN). RJ45 Ethernet Connector.

Maintenance and Service

Vaisala sensors are famous for their stability, providing the longest calibration intervals in the industry. Maintenance is minimized, usually consisting of occasional cleaning of optical sensors. And in case more is required, Vaisala provides world-class service on a global basis.

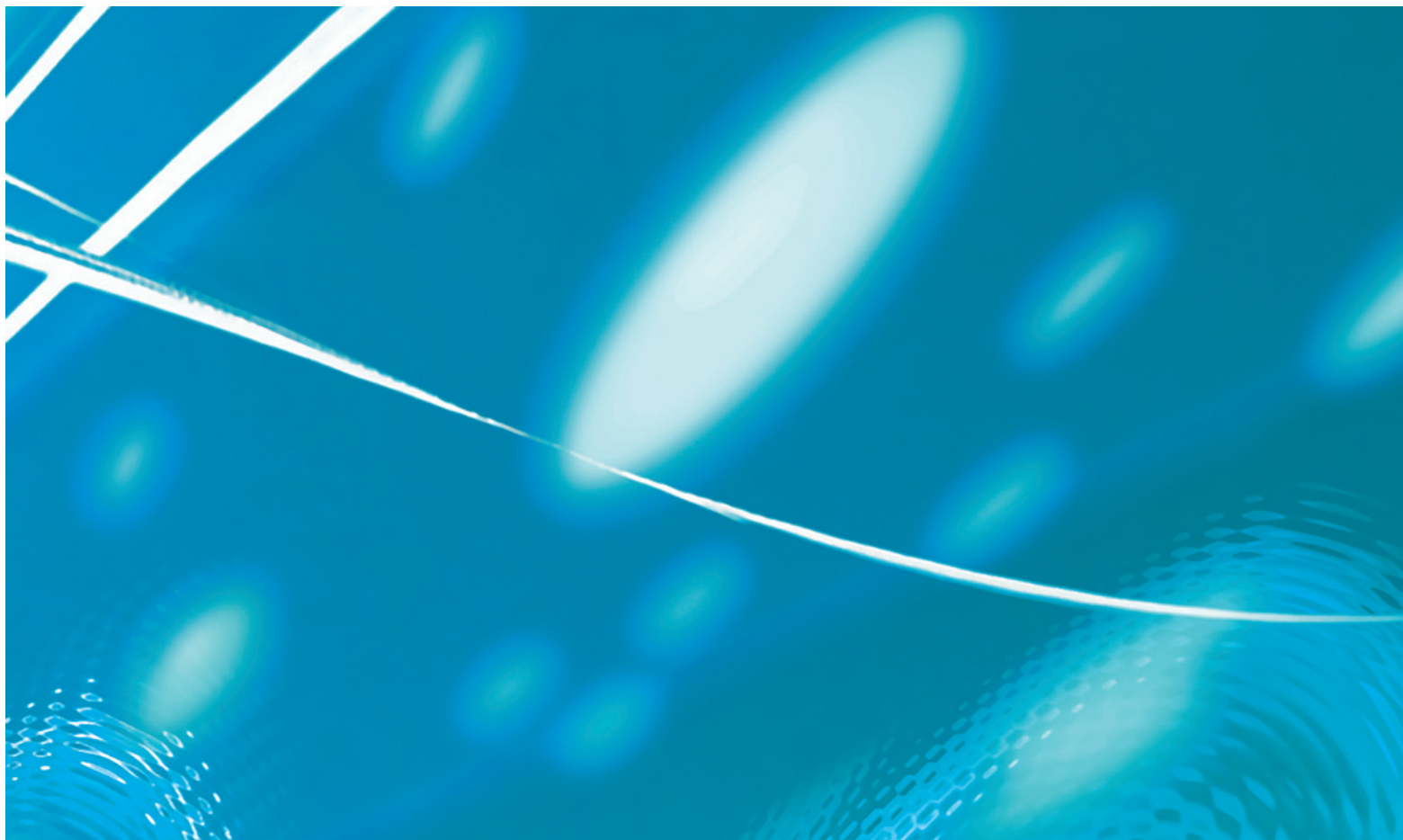# Better safety and efficiency in one smart package
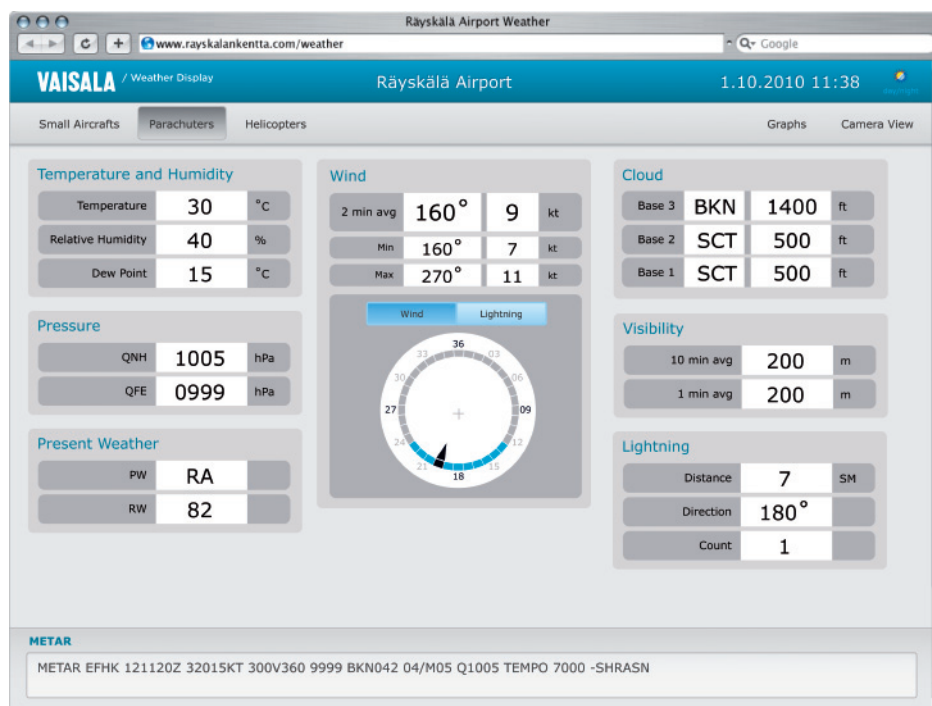
Small Airport System display

Introduce higher safety and improve your airport business with a functional and durable weather package. Enjoy leading ease of operation, reliable information and long service lifetime with minimum maintenance costs.

Vaisala is about peace of mind – the best and the most advanced technologies proven in the harshest conditions around the world. Sometimes important improvements can be easy and simple.

*NOTE: Each Vaisala Avimet® Small Airport System is a stand-alone solution designed specifically for the needs of small operators and cannot be used as the only weather solution at larger ICAO categorized airports.

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www.vaisala.com