

# Vaisala Fixed Site Observation System AWS520



## Features

- Cost-effective stand-alone weather observation and reporting system for real time aviation applications
- Aviation support for defense operations, uncategorized airports, helipads, small unmanned landing strips and test/training ranges
- All significant aviation weather parameters measured by one compact unit installed on a pole mast
- Accurate measurements with built-in data validation
- Large variety of different sensors and telemetry options
- Suitable for the harshest arctic and coastal locations
- Ease of use with advanced display products
- Selected by the US Air Force for their OS21 Fixed Based System Program

## Compact and robust

The Vaisala Fixed Site Observation System AWS520 offers high performance in a very compact package, integrated upon a steady 10 meter pole mast. The mast tubes are made of anodized aluminum and painted with aviation specific colors. All remaining parts of the main assembly are made of acid-proof stainless steel to resist weathering. One person can quickly and safely tilt the mast with an easily detached winch to install and maintain the sensors and other equipment installed on the upper mast assembly. The base of the mast is set on a single concrete pad making the installation easy and economical.

## Full aviation support

The AWS520 measures all the meteorological parameters needed in aviation including wind speed and direction (Gust and Squall), atmospheric pressure (QFF, QFE, QNH, pressure tendency), air temperature and humidity (dew point), precipitation accumulation, cloud height and coverage, visibility, precipitation type and lightning.

The AWS520 is capable of reporting the prevailing weather conditions to pilots and other users by a number of different media. Spoken weather reports are available through a voice module using a VHF radio transceiver or a public switch telephone line. The data reports can be also sent via satellite telemetry, LAN, hard-wire modem, or UHF / VHF radio modems

to a standard laptop PC provided with a software to display numerical and graphical data and code automatically METAR and SPECI aviation weather reports. A weather-resistant pocket PC with a graphical display software is available as an easy-to-use local display and maintenance terminal.

## Field-proven quality measurements

The AWS520 is equipped with built-in algorithms to ensure the quality of each measurement and a testing system to continuously check the correct operation of the hardware. For each parameter, tests are carried out on the minimum, maximum and step limits. When data is entered manually, quality checks ensure that the operator does not enter incorrect values.

Coupled with Vaisala's continuous and extensive research and development a large number of top-class Commercial Off-The-Shelf (COTS) sensor options are available for the AWS520:

- The Vaisala WINDCAP® Ultrasonic Wind Sensor
- The Vaisala HUMICAP® Relative Humidity and Temperature Sensor
- The Vaisala BAROCAP® Pressure Sensor
- The Vaisala Precipitation Sensor
- The Vaisala Visibility and Present Weather Sensor
- The Vaisala Ceilometer
- The Vaisala Thunderstorm Sensor

# Technical Data

## General

Data Collection Platform	Vaisala Data Logger QML201A
Temperature	
Operating *)	-50 ... +60 °C (-58 ... 140 °F)
Storage	-50 ... +70 °C (-58 ... 158 °F)
Humidity	0 ... 100 % RH
EMC	In compliance with EN 61326-1 (2001-12) Electrical equipment for measurement, control and laboratory use - EMC requirements - for use in industrial locations
IP rating	NEMA 4X/IP-66
Materials	Acid-proof stainless steel Painted aluminium Plastic
Mast**)	Tiltable 10 m (30 ft) pole mast
Enclosure	600 (H) x 400 (W) x 200 (D) mm
Weight	Enclosure approx 20 kg Mast with sensors approx 150 ... 200 kg
Maximum wind speed	With two sets of guy wires 75 m/s (130 kt)
Powering **)	90 ... 264 VAC, 45 ... 65 Hz
Internal battery	12 Ah/12 V
Battery regulator	Charge/recharge control Temperature compensation Deep discharge protection
Simultaneous inputs from solar and AC power allowed	

## Data validation, calculations and reports \*\*)

Data quality control	Upper/lower climatological limits Step change validation Sensor status indication
Statistical calculations	Averaging over user set periods Minimum/maximum values Standard deviation Cumulative values
Other calculations	Dew point QNH, QFE, QFF, pressure tendency Gust, Squall Day/night visibility
Weather data reports (w/ MIDASIV or AOS sw)	METAR SPECI

## Standard sensor options \*\*)

Wind speed & direction	WS425
Atmospheric pressure	PTB220
Air temperature, relative humidity & dew point	QMH102MP
Rain/precipitation	QMR102, RG13
Cloud height & coverage/vertical visibility	CL31
Visibility & present weather	PWD22
Lightning	SA20MP

## Standard communication options \*\*)

Satellite communication	Iridium, Inmarsat-C
Wireless communication	UHF, VHF, Voice radio, GSM, GPRS
Landline communication	RS232, RS485 bus, PSTN, Fixed line, LAN, Optical fibre
Data displays	DD50, WD30(TU), WD50, Pocket/Laptop/Tabletop PC

\*) for further extended range, please contact Vaisala

\*\*) for other calculation, reporting, mast, solar powering, sensor and communication options, please contact Vaisala



**Vaisala Oyj**  
Helsinki, Finland  
Tel. (+358 9) 894 91  
Fax: (+358 9) 8949 2876  
Email: defensesales@vaisala.com

For more detailed contact information and for other Vaisala locations visit us at:  
[www.vaisala.com/defense](http://www.vaisala.com/defense)

