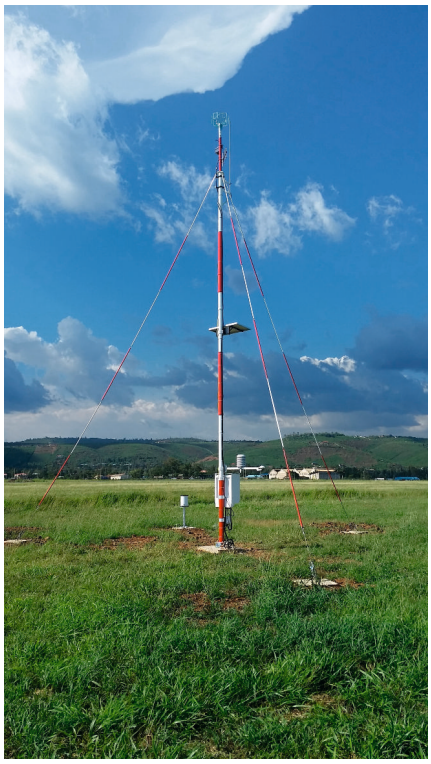
Automatic Weather Station AWS310-SITE



Vaisala Automatic Weather Station AWS310-SITE is an automatic weather station that is optimized for airport weather observations. Based on the proven Vaisala AWS310 weather station, AWS310-SITE provides reliable and accurate weather measurements for aviation applications using ICAO- and WMO-compliant sensors.

Features

- Designed and tested for aviation applications with Vaisala AviMet® systems
- Complete solution for weather data collection
- Wide range of installation, power supply, and communication options
- ICAO- and WMO-compliant sensors with long calibration intervals
- Surge protection for power input, sensor connections, and output data connections

Optimized for Airport Weather Observation Needs

AWS310-SITE is specially designed and tested for Vaisala AviMet Automated Weather Observing System (AWOS) and Low-level Windshear Alert System (LLWAS), ensuring complete end-to-end system integration. With Vaisala AviMet, users are able to collect and view weather data remotely, as well as monitor and control the AWS310-SITE observation stations.

A Complete Solution

The AWS310-SITE solution includes everything required for accurate and reliable weather measurements: the enclosure, a wide variety of sensor options, installation kits, power supply, and communication devices.

The solution has a robust, tightly sealed IP66 stainless steel (AISI 316) enclosure to protect the electronics. AWS310-SITE is available with different installation and powering options according to customer needs and site requirements, including a solar-powered option for remote locations.

The AWS Client software is included for maintenance purposes to support setup, diagnostics, and data retrieval.

Data Collection

Meteorological data is sent to the airport weather observation system in real time. There are several standard communication options available, including landline communication through RS-232, RS-485, or leased-line modem, or wireless communication through a UHF/VHF radio interface.

To provide redundancy in safety-critical airport applications, data can be sent simultaneously via 2 parallel communication ports. The data is also saved on the weather station's external memory card. The stored log files can be exported to external applications.

Excellent Long-term Stability

Sensor calibration is vital to accurate and reliable observations. The sensors of AWS310-SITE ensure excellent long-term stability with a low risk of drift or sudden changes in calibration. This results in longer calibration intervals, lower maintenance costs, and reduced downtime.

Installation Options

There are several standard masts and mast installation kits available for AWS310-SITE. Frangible options include pole masts DKE110F, DKP721, and DKP711 and lattice mast DKE200. Vaisala frangible masts are impact-tested, and they comply with the frangibility requirements set in the following specifications:

- *ICAO Doc 9157 Aerodrome Design Manual, Part 6 Frangibility, First Edition, 2006*
- *FAA AC 150/5345-45C – Low Impact Resistant Structures, 2007*

Standard Safety Features

AWS310-SITE includes surge protection for the power input, sensor connections, and output data connections. Surge protectors protect the AWS310-SITE unit from potential damage caused by poor or variable power quality, or other possible surges.

Technical Data

Operating Environment

Operating temperature [1]	−40 ... +60 °C (−40 ... +140 °F)
Storage temperature [2]	−60 ... +70 °C (−76 ... +158 °F)
Operating humidity	0 ... 100 %RH

1) Excluding backup battery, QMD202, DXL421, and RG13(H). See the manufacturer documentation.
2) Excluding HMP155. See the manufacturer documentation.

Environmental Compliance

Test	Applied Standard or Test Procedure	Specification
Operation		
Dry heat	IEC 60068-2-2	+60 °C (+140 °F)
Cold	IEC 60068-2-1	−40 °C (−40 °F)
Damp heat	IEC 60068-2-30	+40 °C (+104 °F) / 85 ... 95 %RH
Vibration (sinusoidal)	IEC 60068-2-6	Frequency range 5 ... 200 Hz 1.2 mm/s velocity, 5 ... 12 Hz 0.7 g, 12... 200 Hz
Vibration (random)	IEC 60068-2-64	5 ... 100 Hz
Shock	IEC 60068-2-27	5.0 g, pulse duration 11 ms with 100 pulses in each direction
Storage		
Dry heat	IEC 60068-2-2	+80 °C (+176 °F)
Cold	IEC 60068-2-1	−60 °C (−76 °F)
Damp heat	IEC 60068-2-30	+40 °C (+104 °F) / 85 ... 95 %RH
Transport		
Vibration (random)	IEC 60068-2-64	5 ... 200 Hz
Shock	IEC 60068-2-27	18 g, pulse duration 6 ms, with 100 pulses in each direction
Rough handling	IEC 600068-2-31	Drop height 60 cm (23.62 in)

EMC Compliance

Test	Applied Standard or Test Procedure	Specification
Emissions radiated	CISPR 32 Class B (EN 55032)	30 MHz ... 2 GHz
Emissions conducted to mains (AC)	CISPR 32 Class B (EN 55032)	150 kHz ... 30 MHz
Emissions conducted to telecommunication lines	CISPR 32 Class B (EN 55032)	150 kHz ... 30 MHz
Emissions, harmonic current	EN 61000-3-2	0 ... 40th harmonic
Immunity to RF field (80 MHz ... 6 GHz)	EN 61000-4-3	11 V/m (80 MHz ... 1 GHz) 4 V/m (1 GHz ... 6 GHz)
Immunity to electric fast transient	EN 61000-4-4	2 kV AC, 1 kV I/O
Immunity to surge	EN 61000-4-5	2 kV / 1 kV AC, 1 kV I/O
Immunity to conducted RF	EN 61000-4-6	4 V e.m.f. (150 kHz ... 80 MHz)
Immunity to voltage dips and short interrupts	IEC 61000-4-11	0 % 1 cycle 40 % 10 cycles 70 % 25 cycles 0 % 250 cycles

Powering Specifications

AC (mains) power	100 ... 240 VAC (90 ... 264 VAC), 50 ... 60 Hz (45 ... 65 Hz) 5.6 A maximum (120 VAC)
External DC	16.8 ... 26.4 VDC 10 A maximum
Solar panel	80 W 15.5 ... 30 VDC 2.5 A maximum
Internal backup battery	12 V / 26 Ah or 12 V / 52 Ah
Mains fuse (nominal)	10 A minimum

ENC652 Specifications

IP rating	IP66
Material	Stainless steel AISI 316, painted white
Size (enclosure only)	600 × 500 × 207 mm (23.62 × 19.68 × 8.15 in)
Weight	Approximately 30 kg (66 lb)
Maximum wind speed	75 m/s (168 mph)

Standard Sensor Options

Wind speed and direction	WMT700, WA15 (dual sensors available)
Air temperature and relative humidity	HMP155
Barometric pressure	PTB330 (Class A accuracy, with 3 transducers)
Global solar radiation	SMP3, SMP6, SMP10
Sunshine duration	CSD3
Rain/Precipitation	RG13(H), OTT Pluvio^2 L
Runway temperature	DRS511
Runway temperature and surface state	RWCC
Ground temperature	QMT107
Soil temperature	QMT110
Standard interface	CL31, LT31, FS11, FS11P, PWD22, TSS928

Standard Communication Options

Landline communication	RS-232, RS-485, or leased-line modem
Wireless communication	UHF/VHF radio interface
Fiber optic communication	With Vaisala Field Communication Box FOC201 or customer-provided solution
Dual communication	Any combination of 2 standard communication options

Standard Accessories

2 enclosure locks

USB maintenance cable

2 removable 2 GB CF memory cards

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