

# Vaisala Automatic Weather Station AWS310

/ AN INNOVATIVE WEATHER SOLUTION FOR ALL NEEDS



**VAISALA**

# Accurate, real-time weather data you can rely on

*The Vaisala Automatic Weather Station AWS310 – an innovative solution you can count on for reliable, accurate environmental measurements. As a stand-alone weather data collection system, Vaisala AWS310 requires only a minimal amount of maintenance. It can also be customized to operate as part of your existing data collection system or AWS network.*

*From synoptic meteorology and climatological research, to hydrology and urban meteorology – the Vaisala AWS310 is the ideal solution for professional applications.*



## Preconfigured or customized – it's up to you

When you choose the Vaisala Automatic Weather Station AWS310, you get the complete solution. Enclosure, mast, sensors, sensor installation kits, powering equipment, and telemetry devices – everything you need to start taking accurate and reliable weather measurements. The AWS310 comes with from a range of preconfigured options including sensor set, telemetry components, and power setup. If you have special requirements, the AWS310 is customizable upon request, as is the reporting format – enabling integration into any data collection system.

## Validated data from reliable sensors

The AWS310 includes built-in algorithms that test each measurement to ensure quality. The minimum and maximum readings of every parameter are thoroughly tested, as are the step limits. The results can then be visualized using the optional Vaisala MCC301 PC software, which displays meteorological data in numerical and graphical formats while automatically saving it to the PC hard drive.

## Data processing

Logged meteorological data is saved on the data logger's internal memory or on the external compact flash card, but can also be transmitted to



*Vaisala MCC301 software displays and logs data from AWS310 weather station. It is easy to install and operate. The data distribution feature allows several client PCs to gather weather data from the master PC.*

a remote workstation as a real-time feed. The AWS310 has a variety of standard and custom connectivity options available depending on your system's location and specification. Choose from terminal, Ethernet and GPRS/GSM as standard, or get 3G, landline and other satellite options as part of a custom setup.

## Key benefits:

- Best options preconfigured, also fully customizable for special needs
- WMO-compliant sensors for validated data
- Remote configuration management
- Long calibration intervals
- Fast delivery for preconfigured systems



## Update and maintain remotely

You don't have to be on site to update or adjust sensor settings – the AWS310 can be reached remotely, with self-diagnostic reports available from the data logger and from the sensors. The AWS310 can also automatically download a new configuration file from a network server, making maintenance even easier.

## Excellent long-term stability

Calibration is vital to ensure the accuracy and reliability of weather station data. AWS310 sensors have excellent long-term stability with a low risk of drifting or sudden changes in calibration. This results in longer calibration intervals, saving maintenance costs and reducing downtime.



## On-site calibration

On-site calibration equipment checks and adjusts air pressure, air temperature, relative humidity, wind, and visibility. In addition, high-quality laboratory calibration services are available for your sensors and components in Vaisala Service Centers.

## Vaisala weather station training

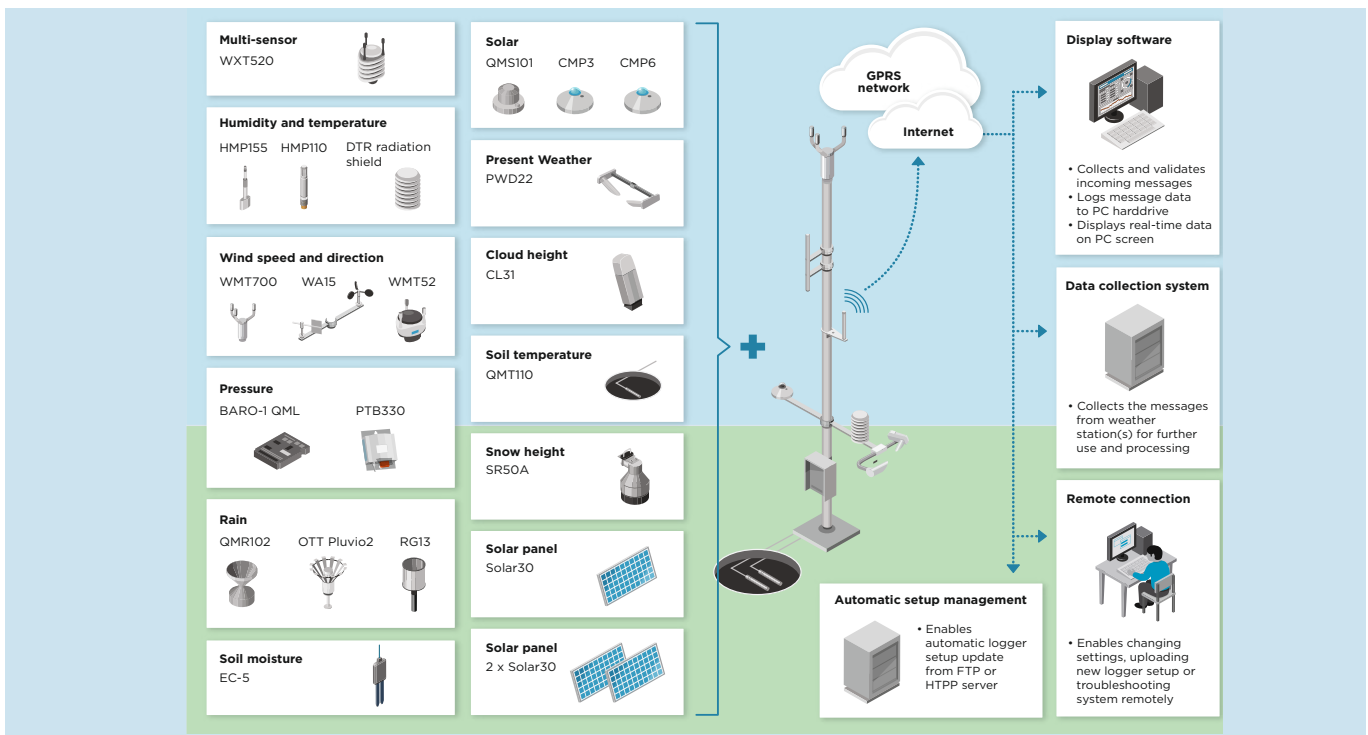
Reliable data is not achieved without skilled technical staff to operate and maintain weather stations. Training courses provide an excellent overall understanding of the AWS310 system, and also cover how to install, operate, troubleshoot, and conduct any necessary field repairs.

### AWS310 includes:

- Tiltable pole mast
- Electronics enclosure
- Mains or solar powering
- Local and remote communications
- Sensors
- Mounting accessories
- Optional data display software
- Express spare parts

### Measurements (pre-configured)

- Wind speed and direction
- Air temperature
- Relative humidity, dewpoint
- Precipitation
- Global solar radiation
- Visibility and present weather
- Cloud height and sky condition
- Ground temperature and moisture
- Snow depth



# Technical Data

## General

Data Collection Platform	Vaisala Data Logger QML201
Operating temperature	-40 ... +60 °C
Storage temperature	-60 ... +70 °C
Humidity	0 ... 100 %RH

Methods of Testing and Required Test Results, as follows:

APPLIED STANDARD OR TEST PROCEDURE

Environmental tests: Operating	
Dry heat	IEC 60068-2-2
Cold	IEC 60068-2-1
Damp heat	IEC 60068-2-78
Vibration	IEC 60068-2-6/34

Environmental tests: Storage	
Dry heat	IEC 60068-2-2
Cold	IEC 60068-2-1
Damp heat	IEC 60068-2-78

Environmental tests: Transport	
Vibration (random)	IEC 60068-2-6/34
Rough handling (free fall etc.)	IEC 60068-2-31

EMC tests	
Electrostatic discharge	EN 61000-4-2
Fast transient burst	EN 61000-4-4
RF field immunity (80MHz...18GHz)	EN 61000-4-3
Transient surge	EN 61000-4-5
Conducted RF immunity	EN 61000-4-6
Immunity to Voltage Dips and Short Interrupts	IEC 61000-4-11

RF field emission	EN 55022
Emission to DC/I/O ports	EN 55022

Safety tests	
Electrical safety	IEC 60950-1

Enclosure protection & IP-class	IP66
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Enclosure materials	Acid-proof steel (AISI316), painted white
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Enclosure size	600 (H) x 500 (W) x 200 (D) mm
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Mast*)	Tilttable 2/3/10 m pole mast
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Weight	Enclosure approx. 30 kg 10 m mast with sensors 150 ... 200 kg
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Maximum wind speed	DKP110 mast with one set of guy wires 60 m/s DKP210W mast with two sets of guy wires 75 m/s
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Powering	90...264 VAC, 45...65 Hz 12...24 VDC recommended (30 VDC max.)
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Solar panel	30W / 2 x 30W
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Internal battery	Up to 52 Ah / 12 V
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Battery regulator	Charge/recharge control Temperature compensation Deep discharge protection Simultaneous inputs from solar and AC (mains) power allowed
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## Data Validation, Calculations and Reports\*)

Data quality control	Upper / lower climatological limits Step change validation Sensor status indication
Statistical calculations	Averages over set periods Minimum / maximum values Standard deviation Cumulative values

Other calculations	Dew point Heat index Wind chill Wet bulb temperature QFE/QFF/QNH pressure Sunshine duration Evapotranspiration
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Default reporting formats	Table format diagnostics message CSV (comma-separated values) log message Vaisala SMSAWS message
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## Preconfigured Sensor Options\*)

Weather transmitter	WXT520
Wind speed & direction	WA15, WMT52, WMT703
Atmospheric pressure	BARO-1QML (Class A accuracy) PTB330 (Class A accuracy, with three transducers)
Air temperature, relative humidity & dew point	HMP110, HMP155
Rain / precipitation	QMR102, RG13, OTT Pluvio <sup>2</sup>
Global solar radiation	QMS101, CMP3, CMP6
Visibility & present weather	PWD22
Cloud height & sky condition	CL31
Ground temperature	QMT110
Soil moisture	EC-5
Snow depth	SR50A

## Preconfigured Communication and Data Collection Software Options\*)

Wireless communication	GSM, GPRS
Landline communication	RS-232, RS-485 bus, LAN
Data collection software	Vaisala Observation Console MCC301

\*) for other data validation, calculation, report, mast, powering, sensor, communication and data collection software options, please contact Vaisala

## Accessories Provided

Two locks for enclosure
USB maintenance cable
2 pcs removable 2GB CF memory cards



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