Vaisala Automatic Weather Station AWS310

/ AN INNOVATIVE SOLUTION FOR ALL WEATHER MEASUREMENTS
**A Simple, All-In-One Solution**

Vaisala is the one-stop shop for automatic weather stations. When you choose the Vaisala AWS310, you get a complete communication and data monitoring solution, including sensor, electronics, mast, and power supply – everything you need to start taking accurate and reliable weather measurements. The stations are able to satisfy the general and specific needs of several applications, such as synoptic, aviation, and agricultural meteorology, hydrology, and climatology. The ability to use the same standard hardware and software for many different requirements lowers the cost of training, spare parts, and logistics support. When the total life-cycle cost of operating an entire network is fully considered, Vaisala systems are the most economical solution.

**Validated Data From Reliable Sensors**

Vaisala weather stations and instruments are fully compliant with World Meteorological Organization guidelines. The design quality of Vaisala weather stations has been proven not only through extensive tests in the development phase, but also in the field with over 20,000 installations worldwide. To ensure continuous accuracy of measurements and calculations, the AWS310 includes built-in data quality controls that test measured sensor data against minimum and maximum climatological limits and step changes between successive measurements. In addition, the weather station’s Vaisala QML logger continuously monitors the status of the sensors to ensure measurement reliability, notifying the user if any sensor status becomes invalid. All the sensors operate independently from each other, meaning that an individual sensor failure does not affect the performance of the other sensors.

**Data Collection And AWS Networking – Making It Easier Still**

For AWS310 networks, the Vaisala Observation Network Manager NM10 software provides a powerful browser-based interface for 24/7 monitoring, access, and control of all your observation sites, no matter where they are. Continuous and reliable observations improve the performance of your weather services and weather-critical operations, while shorter site visits and correct maintenance actions save time and money.

**Key benefits:**

- Common options preconfigured; also fully customizable for special needs
- WMO-compliant sensors for validated data
- Remote configuration management
- Easy remote monitoring of network status via optional NM10 software
- Long calibration intervals
- Fast delivery for preconfigured systems
With Vaisala Observation Network Manager NM10 you can monitor, access and control all your AWS310 observation sites 24/7 anywhere.

Even without the NM10 software, you don’t have to be on site to adjust settings or fix problems – the Vaisala AWSClient software supports setup, diagnostics, and data retrieval and is included in each AWS310 delivery. The AWS310 StationView GUI allows the user to view basic station information, sensor status, and readings, set site-specific parameters, and perform many of the AWSClient functions using a graphical user interface. The AWS310 can also automatically download a new configuration file from a network server, making maintenance even easier.

**Vaisala Weather Station Training**

Reliable data cannot be achieved without skilled technical staff to operate and maintain your weather station. Training courses provide an excellent overall understanding of the AWS310 system, and also cover how to install, operate, and troubleshoot the system and conduct any necessary field repairs.
Technical Data

**General**

<table>
<thead>
<tr>
<th>Data Collection Platform</th>
<th>Vaisala Data Logger QML201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-40 ... +60 °C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-60 ... +70 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 ... 100 %RH</td>
</tr>
</tbody>
</table>

**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 60068-2-30

**Environmental tests: Storage**
- Dry heat: IEC 60068-2-2
- Cold: IEC 60068-2-1
- Damp heat: IEC 60068-2-30

**Environmental tests: Transport**
- Vibration (random): ETSI EN 300 019-2-2v2.3.1
- Rough handling (free fall etc.): ETSI EN 300 019-2-2v2.3.1

**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
- RF field emission: EN 55022

**Safety tests**
- Electrical safety: IEC 60950-1

**Enclosure protection & IP-class**
- IP66 acc. IEC 60529, Sand & dust test acc. MIL-STD 810G
  - Method 506.5 Procedure 1

**Enclosure materials**
- Stainless steel AISI316L, painted white
- Aluminum, painted white

**Enclosure size**
- 600 (H) x 500 (W) x 200 (D) mm

**Mast**
- Tiltable 2/3/10 m pole mast
- Two guy wire sets

**Maximum wind speed**
- 75 m/s with 10 m mast and two guy wire sets
- 90 ... 264 VAC, 45 ... 65 Hz
- 12 ... 24 VDC recommended (30 VDC max.)

**Solar panel**
- 30W / 2 x 30W

**Internal battery**
- Up to 52 Ah / 12 V with simultaneous AC (mains) and solar power supplies

**Battery regulator**
- Charge/recharge control
- Temperature compensation
- Deep discharge protection
- AC (mains) power allowed

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**Data Validation, Calculations and Reports**

<table>
<thead>
<tr>
<th>Data quality control</th>
<th>Upper / lower climatological limits</th>
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<tbody>
<tr>
<td></td>
<td>Step change validation</td>
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<tr>
<td></td>
<td>Sensor status indication</td>
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<tr>
<td>Statistical calculations</td>
<td>Averages over set periods</td>
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<tr>
<td></td>
<td>Minimum / maximum values</td>
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<td></td>
<td>Standard deviation</td>
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<td>Cumulative values</td>
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<tr>
<td>Other calculations</td>
<td>Dew point</td>
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<td></td>
<td>Heat index</td>
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<td></td>
<td>Wind chill</td>
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<td></td>
<td>Wet bulb temperature</td>
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<td></td>
<td>QFE/QFF/QNH pressure</td>
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<td></td>
<td>Sunshine duration</td>
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<td>Evapotranspiration</td>
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</table>

**Default reporting formats**
- Table format diagnostics message
- CSV (comma-separated values) log message
- Vaisala SMSAWS message

**Preconfigured Sensor Options**

- **Weather transmitter**: WA15, WMT703 (dual sensors available)
- **Wind speed & direction**: WXT531, WXT532, WXT535, WXT536
- **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, Pluvio2L
  - (installation pedestal included)
- **Global solar radiation**: SMP3, SMP6, SMP10, SMP21, SMP22, SP Lite2

**Preconfigured Communication and Data Collection Software Options**

- **Wireless communication**: Five-band UMTS 3G modem (with quad-band GSM GPRS support)
- **Landline communication**: RS-232, RS-485 bus, LAN
- **Data collection software**: Vaisala Observation Network Manager NM10
- **Satellite communication**: Vaisala High Data Rate GOES Transmitter (V2.0)
- **Maintenance terminal software**: Vaisala AWS Client with StationView GUI

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**Accessories Provided**

- USB maintenance cable
- Removable 2GB CF memory card

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