

An automatic weather station is mounted on a tall metal pole in a vineyard. The station includes a black cylindrical sensor housing, a white anemometer cup, and a solar panel. The background shows a lush green vineyard under a blue sky with scattered white clouds.

Automatic Weather Station

Aeron's Automatic Weather Station, also known as Wireless Weather Station measures weather parameters such as Wind Speed, Wind Direction, Air Temperature, Relative Humidity, Barometric Pressure, Solar Radiation, Leaf Wetness, Soil Moisture, Soil Temperature and others using precision sensors and Wireless Data Logger. The data logger captures data from sensors every second, checks validity and integrity of the raw data and stores in SD card at user defined Logging interval. Simultaneously the data is transmitted to Aeron's cloud server (Aeron Live) at Upload interval. The data Upload interval can be configured for 5, 10, 15, 30 and 60 minutes. The minimum and maximum values are also recorded in addition to the average values of Air Temperature and Wind speed during Logging interval.

“We cannot change weather but it's prior knowledge helps reduce losses”

During no-network or poor-network situations when data logger is not able to make connection with cloud, data is stored in temporary flash memory (2MB size), the same is uploaded to server as soon as connection is established.



Technical Specifications of Sensors

Aeron's Wireless Weather Station is available with choice of sensors from reputed global manufactures. Following is the list of sensors offered in our standard package.

Solar Radiation (Davis)

- Spectral Range: 400 - 1100nm
- Range: 0 to 1800 W/m²
- Accuracy: $\pm 5\%$



Barometric Pressure (Aeron)

- Type: Piezoresistive
- Range: 15 to 115 kPa
- Accuracy: $\pm 1.5\%$ of FS
- Resolution: 0.1 mm



Soil Temperature (Aeron)

- Type: Thermistor
- Range: -40°C to 80°C
- Resolution: 0.1°C



Leaf Wetness (Aeron)

- Type: Electrical resistance
- Range: 0 - 15
- Accuracy: ± 0.5



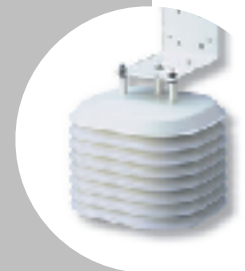
Soil Moisture (Vegetronix)

- Type: Electrical resistance
- Range: 0 to 200 cb
- Accuracy: 1 cb
- Cable length: 5m



Air Temperature (Davis)

- Type: Thermistor
- Range: -40°C to 65°C
- Accuracy: $\pm 5\%$



Relative humidity (Davis)

- Type: Film capacitor
- Range: 1 to 100% RH
- Accuracy: $\pm 3\%$
- Resolution: 1%

Wind Speed (Davis)

- Type: 3 cup anemometer
- Range: 0 - 79 m/s
- Accuracy: 1.5 m/s or 5%
- Starting threshold: 1.5 m/s
- Resolution: 0.1 m/s



Wind Direction (Davis)

- Type: Wind vane
- Range: 0° - 360°
- Accuracy: $\pm 7^{\circ}$
- Resolution: 1°

Rain Gauge (Davis)

- Type: Tipping bucket
- Range: Unknown
- Accuracy: 0.25 mm
- Resolution: 0.1 mm



Technical Specifications of Data Logger

Data Logger plays an important role in accurate and reliable measurement of data from various weather sensors and Aeron's Data Logger does nothing less than best job! Aeron's Data Logger consumes lowest energy among its category of devices so that it can work for days without charging. Some of its features such as Firmware-Over-The-Air upgrade, configurations through SMS, user defined target server for data collection, etc. make it highly versatile device. Aeron offers cloud service "Aeron Live" for 24x7 data access from Automatic Weather Stations, Automatic Rain Gauges and Wind Meters.

- Analog inputs: upto 8 single-ended
- Analog inputs range: 0-20mA, 4-20mA, 0-1V, 0-5V
- A/D Bits: 12
- Pulse counters: 2
- Serial inputs: RS232 ASCII and SDI-12
- Serial output: RS232 (for integration with PC)
- Wireless communication: Built-in GSM/GPRS Modem
- GSM Network Type: Quad band (850/900/1800/1900 MHz)
- Memory: 2MB (internal flash), 2GB (external micro SD card)
- Display: Graphic LCD, 128 x 64 resolution
- Timer: RTC with backup battery, synchronisation with server time
- Operating voltage: 9-30 VDC
- Internal power: Li-ion batteries (rechargeable)
- External power: Solar panel or 9-30 VDC



Block Diagram

