



Solar Weather Monitoring Solution for Rooftop Solar Power Plants



“Aeron’s Solar Weather Monitoring Solution for Solar Power Plants measures weather parameters such as Solar Radiation, Ambient Temperature, Module Temperature, Humidity, Wind speed & direction and Inverter, Energy meter parameters using suitable sensors and Wireless Data Logger”

Monitoring of Rooftop Solar Power Plant requires cost effective solution yet high in performance and reliability. The rooftop plants’ size varies from few kW to hundreds of kW. Unlike their big brothers (MW size plants) Rooftop plants have limited budget for monitoring solutions. In most cases there is no local SCADA monitoring and there is no manpower available to oversee efficient plant operation post commissioning. Aeron is offering innovative solution to meet these challenges!

Aeron’s Solar Monitoring Solution measures essential weather parameters, inverter parameters, energy meter parameters in real-time and sends to Aeron’s cloud server. Plant owners and managers can access this data on the go after login on Aeron Live portal. The data can be sent to client server as well.

“Solar Weather Monitoring Solution helps track plant efficiency thereby ensuring maximum return on investment”



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Technical Specifications of Sensors

Aeron's WMS for Rooftop plants is available with choice of sensors from market-leading sensor manufacturers. Following are specifications of some carefully selected sensors for necessary performance at price tag that fits in budget!

Pyranometer (Apogee)

- Spectral Range: 360 -1120nm
- Range: 0 - 2000 W/m²
- Accuracy: ±5%



Irradiance (Meteocontrol)

- Spectral Range: 400 -1100nm
- Range: 0 - 1200 W/m²
- Accuracy: ±5%



Pyranometer (Davis)

- Spectral Range: 400 -1100nm
- Range: 0 - 1800 W/m²
- Accuracy: ±5%



Module Temperature (Meteocontrol)

- Type: PT1000
- Range: -20°C to +70°C
- Accuracy: ±1%
- Cable length: 10m



Module Temperature (Fronius)

- Type: PT1000
- Range: -20°C to +150°C
- Accuracy: ±0.5°C
- Cable length: 5m



Air Temperature (Davis)

- Type: Thermistor
- Range: -40°C to 65°C
- Accuracy: ±5%



Relative humidity (Davis)

- Type: Film capacitor
- Range: 1 to 100% RH
- Accuracy: ±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: ±7°
- Resolution: 1°

Wind Speed (Fronius)

- Type: 3 cup anemometer
- Range: Unknown
- Accuracy: ±5%
- Starting threshold: 2.5 m/s





Technical Specifications of Data Logger

Data Logger plays an important role in accurate and reliable measurement of data from various sensors, inverter and energy meters. And Aeron's Data Logger is nothing less than best! Data Logger works well with all market-leading inverters, energy meters and combiner boxes which have RS485 MODBUS interface for communication. Data from sensors, inverters, energy meters is sent to Aeron Live Web Service for 24x7 access!

- Analog inputs: upto 16 single-ended or 8 differential
- Analog inputs range: 0-20mA, 4-20mA, 0-1V, 0-5V
- A/D Bits: 24
- Pulse counters: 2
- Serial inputs: RS232 and RS485 MODBUS
- Serial output: RS485 MODBUS (for integration with SCADA)
- Wireless communication: Built-in GSM/GPRS Modem
- 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)



Block Diagram

