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Monitoring and communications VSN800 Weather Station

The weather stations belonging to the VSN800 family allow the monitoring of a series of environmental and panel data through Aurora Vision cloud platform, being equipped with temperature, irradiation and wind sensors.

The VSN800 contains the essential environmental sensor set needed for solar monitoring. The expanded sensor set allows a wider monitoring of environmental parameters.
VSN800 is the perfect companion to the VSN700 Data Logger products and it can directly be connected to the RS-485 port of the new PVS string inverter families.

Shipped preconfigured and ready for installation requiring no special tools
The VSN800 Weather Station is delivered ready for installation and requires the installer to mechanically mount the modules on a user-supplied mast, connect power and communication, and initialize the automatic system commissioning process.
No special software, or on-site calibration is required.

The all-in-one weather station reduces the installation, support and maintenance cost while improving the robustness and manageability of the PV plant monitoring solution.
The basic sensor set the VSN800-12 model is equipped with provides data needed to calculate a performance ratio allowing a plant operator to track solar array performance against expected energy production.
The advanced sensor set the VSN800-14 model is equipped with improves monitoring of weather conditions that can affect energy production. The extra irradiance sensor for mounting at the plane of the array allows more accurate measurement of irradiance that is incident in the plane of the solar panels.

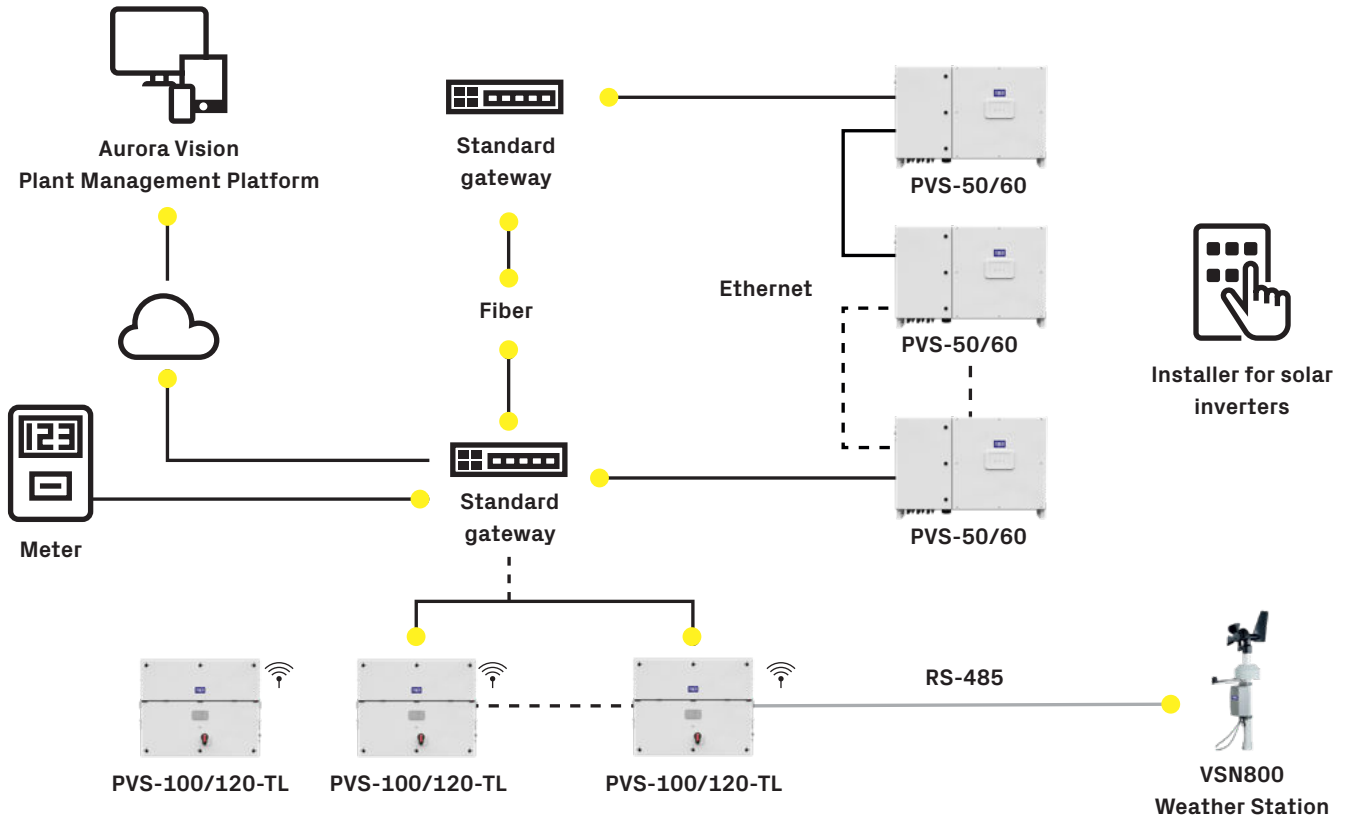
The wind speed and direction sensor gives the operator information about how the wind may be cooling the panels and some indication of how much dust may be accumulating on the panels.

Highlights
- Two models offered for basic and advanced sensor sets
- VSN800-12 includes a basic sensor set: ambient temperature, solar irradiance, and back of module temperature
- VSN800-14 includes additional advanced sensors: plane of array irradiance and wind direction and speed
- Sensors, data acquisition unit, and RS-485
- Can be connected directly to the RS-485 port of the new PVS string inverter families.

VSN800 Weather Station sensors set supplied

Sensor type	VSN800-12	VSN800-14
Pyranometer	Y	Y
Ambient Temperature	Y	Y
Back of PV module temperature	Y	Y
Second Pyranometer	N	Y
Wind Speed	N	Y
Wind Direction	N	Y

Application with PVS string inverters



Technical data and types

Type code	VSN800 Weather Station	
	VSN800-12	**VSN800-14**
Sensors		
Ambient temperature	Range -40°F to 176°F (-40°C to 80°C) Accuracy +/- 0.54°F (0.3°C)	
PV panel temperature	-40°F to 176°F (-40°C to 80°C) Accuracy +/- 0.54°F (0.3°C) Cable length 25 ft (7.62 m)	
Solar radiation	0 to 1750 W/m2 Accuracy +/- 5% Temperature range -13°F to 131°F (-25°C to 55°C)	
Number of radiation sensors	1 horizontal	1 horizontal, 1 plane of array
Wind direction	N/A	Range 360 degrees Accuracy +/- 22.5° Threshold 2 MPH (0.89 m/s) Temp range -40°F to 140°F(-40°C to 60°C)
Wind speed	N/A	Range 0 to 150 MPH (0 to 67 m/s) Accuracy is Greater of 1 mph (0.45 m/s) or 5% Threshold 2 MPH (0.89 m/s) Temp range -40°F to 140°F (-40°C to 60°C)
Communication		
Serial port	RS-485 2 wire, modbus RTU, SunSpec compliant	
Terminal block	#22 - #18 AWG	
Recommended cable	Belden #1120A or equivalent	
Power supply		
DC power supply input	10-30 VDC, 50mA	
Terminal block	Accepts AWG #22 - #18	
Compliance		
EMC	FCC Part 15, Subpart B; ICES-003; EN 61326-1:2006; Emission class B, Immunity is class A	
Enclosure	UL 94 V-2, ROHS compliant, IP65	
Humidity	0 to 100% Condensing	
Physical parameters		
Dimensions (H x L x P)	0.53 m x 0.1 3m x 0.12 m (20.9" x 5.1" x 4.7")	0.63 m x 0.25 m x 0.33 m (24.8" x 9.8" x 13")
Weight	0.8 kg (1.75 lbs)	3.2 kg (7 lbs)
Ambient temperature range	da -13°F a 131°F (-25°C to 55°C)	
Mounting	Pole or tripod	
Warranty		
Standard warranty	Two years	

Remark. Features not specifically listed in the present data sheet are not included in the product

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