

PVMET Weather Station

Solar Energy Efficiency Monitor

The **PVMET** series of weather stations were designed to meet the needs of alternative energy power generation, specifically solar generation. These stations feature sensors and communication options that provide a powerful add-on to any solar power plant.

The **PVMET-200 is the intermediate level station option.** It features sensors specific to PV and wind power generation. This low cost station is compact and simple to install.

As with all **PVMET** stations it includes a RS-485 Modbus interface.

Features

- Global Solar Irradiance Sensor
- Plane of Array Irradiance Sensor
- 2 x Back-of-PV Panel Temp Sensors
- Ambient Air Temperature Sensor
- Wind Speed Sensor
- Wind Direction Sensor

- Modbus RS-485 Communication
- Sunspec Ver. 1.1 Protocol Optional

Sensors & Options

* **Ambient Air Temperature.**
Housed in a passive shield

* **Global Irradiance**
The irradiance sensor is mounted to the system on an extension bracket to provide global irradiance.

* **Plane-of-Array Irradiance**
A separate plane-of-array sensor is supplied with a mounting bracket to attach to the side of a PV panel.

* **Back-of-Module Temperature.**
These sensors are attached to the back of the PV panel using thermal conductive adhesive tape. They provide accurate panel temperatures, an important parameter for efficiency monitoring. One sensor is shipped with each system. The **PVMET-200** supports two sensors.

* **Wind Speed and Direction**
A mini-aevane anemometer provides both wind speed and direction information.



* **Back-of-Module Temperature.**

These sensors are attached to the back of the PV panel using thermal conductive adhesive tape. They provide accurate panel temperatures, an important parameter for efficiency monitoring. One sensor is shipped with each system. The **PVMET-200** supports two sensors.

* **Wind Speed and Direction**

A mini-aevane anemometer provides both wind speed and direction information.



Communications

The **PVMET-200** has a single, 2-wire, half duplex, RS-485 port. Termination can be enabled or disabled using a jumper located near the RS-485 screw terminals.

By default the **PVMET-200** is configured to operate as a Modbus slave at address 60. The Modbus register layout is compatible with optional SunSpec Ver 1.1. A standard register set is located at address 200 for those that do not wish to use the SunSpec data format.

For users that wish to change settings, a configuration mode is provided. A simple terminal emulator application such as HyperTerminal is required to make changes.

Installation

The **PVMET-200**'s compact light weight design make installation quick and easy. Various mounting options are available, including the Rainwise 3-foot tripod and Mono mount. The **PVMET-200** is supplied with a detachable mast section that can bolted to an existing structure.

All electrical connections are made using screw terminals. Standard sensors are factory installed. As a user/installer the only connections required are power and communications. Connections are accessed by removing the front cover. The cover is attached with 4 screws.

For OEM customers the **PVMET-200** can be supplied with factory installed power and communication cable. This completely eliminates the need for installer to remove the cover.

Customization

The firmware in the **PVMET-200** can be updated through the RS-485 port using a simple PC application. This feature ensure that the **PVMET-200** can be kept up to date with the latest available firmware. In addition Rainwise can provide certain OEM firmware customization. This can include register configuration, specific defaults and protocols.

The **PVMET-200** can also be customized to support customer specific sensors. This service is only available to volume OEM customers.