*PV*MET Weather Station

Solar Energy Efficiency Monitor

The ***PV*MET** series of weather stations were designed to meet the needs of alternative energy power generation, specifically solar generation. These stations feature sensors specific to PV power generation and communication options that provide a powerful add-on to any solar power plant. These affordable stations are compact and simple to install.

The ***PV*MET-150 is an entry level high-end utility grade station**. The ***PV*MET-150** uses a precise second-class thermopile pyranometer allowing for bankable data and is mounted on a tilting bracket to provide global or plane-of-array measurements. The ***PV*MET-150** is available with ISO 9060:1990 and WMO second class, first class and secondary standard pyranometers.

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

Features

- Adjustable Solar Irradiance Sensor for Global or Plane-of-Array Monitoring
- 1 or 2 x Back-of-PV Panel Temp Sensor(s)
- Ambient Air Temperature Sensor

- Modbus RS-485 Communication
- Ethernet Modbus TCP Option Available
- Sunspec Ver. 1.1 Option Available

- Additional Irradiance Sensor Option
- Available with Private Labeling for OEM

Sensors & Options

Ambient Air Temperature.

Housed in a passive solar shield.

Global Irradiance or Plane-of-Array Irradiance.

The irradiance sensor is adjustable and can be set to provide global irradiance (when horizontal) or plane -of-array irradiance when installed to match the PV panel angle.

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 ***PV*MET-150** supports two sensors. The second may be purchased separately.

Communications

The ***PV*MET-150** 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 ***PV*MET-150** is configured to operate as a Modbus slave at address 60. The Modbus register layout is compatible with SunSpec Ver 1.1. A simplified 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 ***PV*MET-150**'s compact, light weight design makes installation quick and easy. Various mounting options are available, including the RainWise Mono Mount. The ***PV*MET-150** 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, communications and external BOM sensors. Connections are accessed by removing the front cover. The cover is secured with 4 screws.

Customization

The firmware in the ***PV*MET-150** can be updated through the RS-485 port using a simple PC application. This feature ensures that the ***PV*MET-150** can be kept up to date with the latest available firmware. In addition, RainWise can provide certain OEM firmware customization. This includes register configuration, specific defaults and protocols.

The ***PV*MET-150** can also be customized to support customer specific sensors. This service is only available to volume OEM customers.