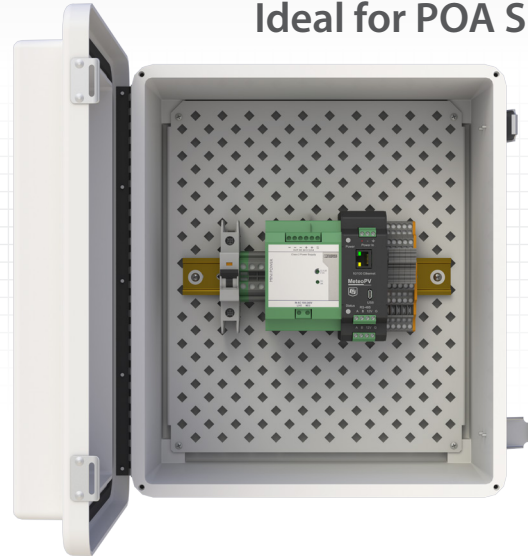
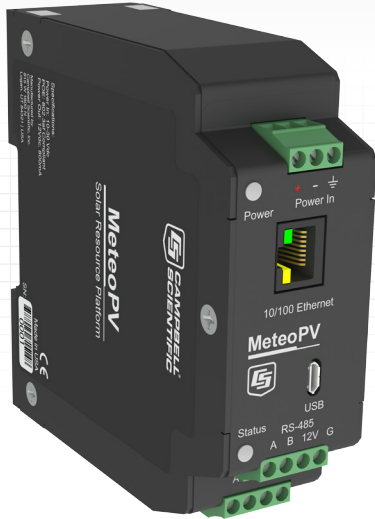




MeteoPV
Solar Resource Platform

Distributed PV Monitoring

Ideal for POA Sunstations



Overview

The MeteoPV Solar Resource Platform delivers key photovoltaic (PV) resource data used in PV system analysis and performance assessment. It is the only purpose-built PV resource data platform on the market, and is ideal for distributed PV monitoring and as a plane-of-array (POA) sunstation on large solar farms.

Built for PV monitoring, the MeteoPV scales to the purpose, size, and complexity of the performance data requirements with

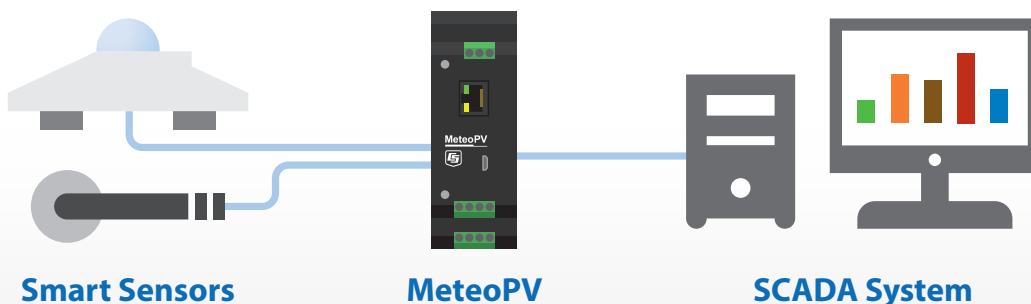
industry standard pyranometers, reference cells, back-of-module temperature sensors, and compact all-weather sensors.

For deployment efficiency and error elimination, an onboard, browser-based, easy-to-understand user interface verifies proper sensor operation and SCADA communication. A PDF installation report containing site data, sensor metadata, and configuration data is generated to simplify sensor documentation and traceability.

Benefits and Features

- › 5-minute setup with intuitive browser-based user interface
- › No coding required
- › Small footprint and DIN-rail mounting for integration with combiner boxes or other control panels
- › Campbell Scientific reliability and quality
- › Compatible with industry-standard pyranometers, reference cells, back-of-module temperature sensors, and compact weather sensors
- › Designed to exceed the life of your PV plant with integrated surge and ESD protection
- › SCADA ready with Modbus RTU and Modbus TCP/IP

Application Example



More info: 435.227.9120
campbellsci.com/meteopv



Technical Description

The MeteoPV communicates with smart pyranometers, reference cells, back-of-module temperature sensors, and compact weather sensors, making it a flexible and easy-to-use POA sunstation solution. The Modbus RTU protocol over RS-485 is used to interface with the sensors, while Modbus TCP/IP protocol is used to communicate with the local SCADA system or other data collection platform. A Modbus map is built-in to the MeteoPV, providing aggregation of sensor readings and valuable metadata from one source.

With its small footprint and DIN-rail mounting, the MeteoPV is ready for integration with existing combiner boxes or other control panels. Power-over-Ethernet compatibility is a convenient method for supplying power without needing additional power supplies.

Installation and commissioning are straightforward without the headache of navigating, configuring and addressing multiple sensor interfaces or generic gateway devices.

User Interface

The MeteoPV hosts an intuitive onboard user interface accessed by a web browser. The browser-based interface simplifies the ini-

tial communication configuration and long-term sensor management. Simply connect, select your sensors, and start measuring.

The image displays two screenshots of the MeteoPV web interface. The left screenshot shows the 'Modbus Map' page, which lists sensor data points. The right screenshot shows the 'Configuration' page, where users can set up site information and sensor configurations.

Register	Point	Measurement	Signal
40001	1	HeartBeat	21
40003	2	DCVoltage	13.034
40005	3	InternalTemperature	30.406
40007	4	Irradiance_1	0.69
40015	8	BOMTemp_1	NAN
40099	50	SR20-D2 (1) Status	0
40101	51	CS240DM (1) Status	141

The Configuration page includes fields for Site Name (Test Site), Location (North 40), and a list of sensors. The selected sensor is SR20-D2 (1), with a Serial Number field and a Modbus Address of 1. The Wiring section shows Irradiance Output with a Measurement Name of Irradiance_1 and a Measurement Description of Irradiance 1.

Specifications

- › CPU: ARM Cortex M4, running at 144 MHz
- › Operating Voltage: 9 to 30 Vdc
- › Operating Temperature Range: -40° to +70°C
- › Power Consumption at 12 Vdc: ~30 mA (not including sensors)
- › Isolated Sensor Power: 12 Vdc, 800 mA
- › Isolated POE: 802.3af Compliant
- › USB Micro B, 2.0 full-speed 12 Mbps for computer connection
- › SCADA Interface
 - ♦ Port: RJ45 jack 10/100Base-TX, full and half duplex Auto-MDIX, magnetic isolation and TVS surge protection
 - ♦ Protocol: Modbus TCP/IP
- › Sensor Interface
 - ♦ Port: Half duplex RS-485
 - ♦ Protocol: Modbus RTU over RS-485
- › Compatible Sensors
 - ♦ Campbell Scientific: CS240DM, MetSENS series
 - ♦ Hukseflux: SR30, SR20-D2, SR05
 - ♦ Kipp and Zonen: SMP series
 - ♦ EKO: MS-80M
 - ♦ IMT Solar: Si-RS485TC