**CAMPBELL SCIENTIFIC®**
WHEN MEASUREMENTS MATTER

Getting Started with the MeteoPV ☀

Overview

The MeteoPV is a Modbus/TCP Modbus/RTU gateway device. It allows you to connect multiple RS-485 sensors, and compile the data from all of them into one collection point. The MeteoPV reads data from all the attached sensors and assembles one Modbus map containing data and metadata from each sensor. All the data can be simply collected by a Modbus Master over Modbus/TCP.

Smart Sensors   **MeteoPV**   **SCADA System**
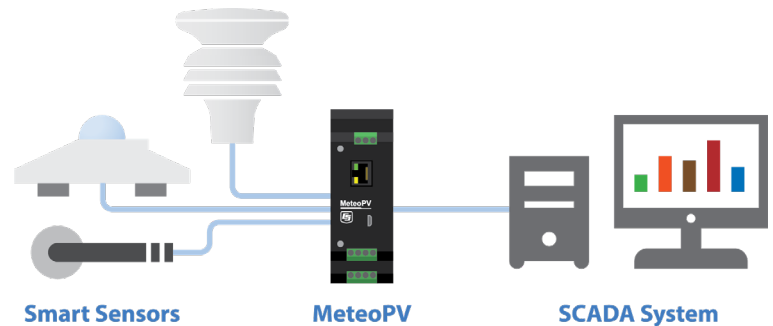
> **NOTE:** *The MeteoPV can be powered by USB (for configuration only), or by a 10 to 30 Vdc power supply connected to its + and - input terminals, or by power over Ethernet (PoE). If powered by the 0 to 30 Vdc power supply or by PoE, the MeteoPV will supply 12 Vdc power to attached RS-485 sensors. The MeteoPV will not supply power to attached sensors if it is being powered only by USB.*

You can get up and running with your MeteoPV in no time. Once you are connected to the MeteoPV with a web browser, navigate to the Configuration page. You can configure a Station Name, Location field, and add Station Notes if desired. Then follow these instructions to Add Sensors, and set up Network Options.

To configure the MeteoPV remotely, you will need to set up an account with Administrator privileges. See the User Accounts section for help on setting up user accounts

Connect to the MeteoPV

This information is provided in the ***Let's Go!*** post card that is shipped with the MeteoPV:

1. Use the USB cable to connect the MeteoPV to the computer USB port.
2. Type www.linktodevice.com in the computer browser.
3. Click **Getting Started**.

Add Sensors

You can configure the MeteoPV to read data from digital sensors connected to its RS-485 terminals. To customize the MeteoPV to read your sensors, follow these steps:

1. Click on the **+Add Measurement** button to see a list of available sensors.
2. Add up to four pyranometers, one compact weather sensor, and up to four back-of-module temperature sensors.
3. After a sensor appears in the list, type the parameters for that sensor to customize it for your application.
4. View the wiring diagram for the sensor by clicking on the Wiring button.
5. If you selected a sensor by mistake or no longer wish to have the MeteoPV read data from it, remove it from the running configuration by clicking the red trash can button next to the sensor heading.
6. Once you have added all of the sensors, perform the **Network Options** and **Apply Configuration** steps. Once the configuration is applied, the MeteoPV will start reading your sensors.

Network Options

After you have finished adding sensors as outlined in the **Add Sensors** section, click the **Network** tab above the **+Add Measurement** button.

Ethernet

The Modbus TCP/IP protocol is used to communicate with the local SCADA system or other data collection platform. The **Ethernet Device Settings** configure the MeteoPV IP connection. Configure the Ethernet Interface by entering the **IP Address**, **Netmask**, and **Gateway** that the data collection system is expecting to use to communicate with the MeteoPV.

For more information on the IP settings, visit the **Network** section of the MeteoPV Configuration page and click on the inline context help indicated by the ❶ sign.

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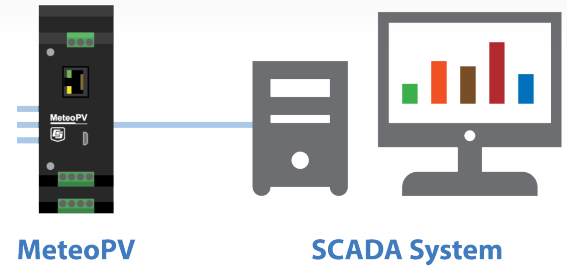
RS-485

The Modbus RTU protocol over RS-485 is used to interface with the sensors. The RS-485 **Device Settings** configure the connection to the attached sensors. Configure the RS-485 **Network Baud Rate**, **Data Bits**, **Parity**, and **Stop Bits**. Ensure that any sensors connected to the MeteoPV are configured with matching parameters. For more information on the RS-485 settings, visit the **Network** section of the MeteoPV **Configuration** page and click on the help indicated by the ❶ sign.

› **Maximum Cable Length:** 1200 m
› **RS-485 Output Voltage:** MeteoPV RS-485 terminals supply 12 V to the attached sensors. The voltage varies slightly with load.

RS-485 12 V Output Specifications	
Output Voltage Minimum	11 V
Output Voltage Maximum	14.5 V
Typical Output Voltage under a full load of 500 mA	11.6 V
Current Supply Limit	500 mA

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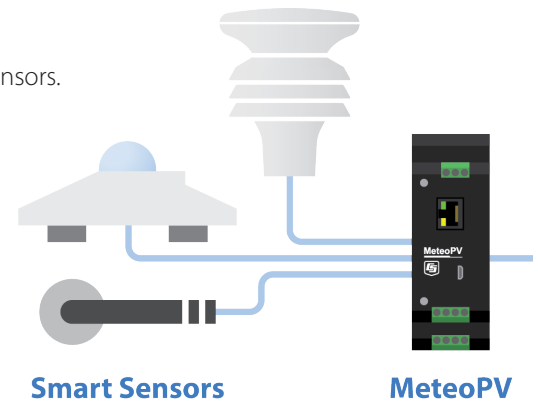
Apply Configuration

Once you have added all of the sensors and set the network options:

› Click the **Apply to Station** button. This will save the configuration to the station.
› You may also click the **Save to File** button to keep a copy of the configuration. It can then be loaded to this or another station using the **Load from File** button.

Once the configuration is applied, the MeteoPV will start reading from the configured devices using the configured network options.

Set Up User Accounts

The device is protected by password access. If you are connected via the USB connection, all access is granted. If you want to be able to control how the device is accessed remotely, you can set up user accounts. To configure the device remotely (over the Ethernet port), you need to set up a user account with Administrator permission level. Click the **User Accounts** button to access the **MeteoPV User Account Setup** dialog box. This table explains what permission levels are available.

User Account Permissions	
Permission Level	**Access**
None	Disable an account without deleting it
Read Only	Permission to view the device values
Administrator	Permission to view the device values, to edit the device configuration, and to create and edit accounts

NOTES:

1. Creating an account with the user name **anonymous**, without a password, allows the specified access to anyone that connects to the device without having to enter a user name. A default **anonymous** account exists with read only access. This allows anyone to be able to see the **Dashboard**, **Historic Data**, and **Modbus Map** without having to enter a user name.

2. The **anonymous** account without password must exist to properly access the device using the Apple Safari browser.

More Information

Additional information is provided at: www.campbellsci.com/meteopv