CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

Solar Energy

www.campbellsci.ca

Benefits of Our Systems

1. Complies with Modbus, Canbus, DNP3 Protocols for simple system integration.
2. Systems perform long-term, unattended data collection.
3. Systems can be configured for every aspect of the application.
4. Dataloggers have on-board mathematical and statistical capabilities.
5. Time-stamped data is recorded allowing historical analyses.
6. Supports various communi cation technologies such as IP, cellular, RS-485,and satellite.
7. Electrical devices can be controlled based on time or measured parameters.
8. Rugged, low power design allows systems to operate in harsh environments.
9. Systems are able to operate in temperatures as low as -40˚C.

CMP11 pyranometer

CR1000 datalogger

Solys2 Suntracker

Kipp & Zonen Solys2 Suntracker being used to make measurements of Direct Solar Radiation (CHP1), Global and Diffuse Sky Radiation (CMP11).

Campbell Scientific offers data acquisition specifically designed for solar applications. Key components include high-speed dataloggers, sensors, communications devices, and software.

The reliability of our systems ensures data collection, even under adverse conditions. Wide operating temperature ranges and weather-proof enclosures allow our systems to operate reliably in harsh environments.

Dataloggers

Our dataloggers make and record measurements, control electrical devices, and can function as PLCs or RTUs. Because they have their own power supply (batteries, solar panels), the dataloggers continue to measure and store data and perform control during power outages. The dataloggers include many different channel types, allowing nearly all sensor types to be measured on a single unit.

Up to 2 million data points can be stored in the datalogger's non-volatile memory, while CompactFlash® cards can be used to increase data storage to tens of millions of points. Data is time and date-stamped to provide key information for identifying and analyzing past events.

Measurement Capabilities

Channel types include analog (single-ended and differential), pulse, switched excitation, and digital. Each of these channels can be independently programmed for various sensor types. Most sensors connect directly to the datalogger, eliminating the need for external signal conditioning. Multiplexers and other peripherals can be used with most of our dataloggers to increase the numbers and types of channels.

Control Capabilities

Powerful on-board instruction sets allow unattended measurement and control decisions based on time or conditional events. Dataloggers can be programmed to perform multiple control functions based on different scenarios.

Sensors

Typical sensors for solar monitoring applications include, but are not limited to: secondary standard pyranometer, pyrheliometer, suntracker, and atmospheric measurements (ie. wind speed & direction, temperature, precipitation, and barometric pressure).

Communications

Multiple telemetry and on-site options for retrieving data or reporting site conditions allow our systems to be customized to meet exact needs. Communications options include direct connect, radio, telephone, cellular phone, satellite, and Ethernet. Systems can be programmed to send alarms or report site conditions by calling out to computers, phones, and radios, or sending SMS or email.

Software

Our PC-based support software simplifies the entire data acquisition process, from programming to data retrieval to data display and analysis. Our software automatically manages data retrieval from networks or single stations. Robust error-checking ensures data integrity over almost any communications link.

Knowledgeable Staff

Campbell Scientific (Canada) Corp. is committed to assisting our clients in the design and implementation of custom measurement systems for their specific solar monitoring needs. Our expertise in system design, production and installation ensures cost-effective, quality solutions.

Kipp & Zonen Suntracker Solys2 Suntracker with Shading Ball Assembly. Measurements of Global and Diffuse radiation are made using the CVF3 ventilation unit and the CMP11 pyranometers.

Kipp & Zonen CMP11 Pyranometer

If you need assistance selecting the best sensor, telemetry, and datalogger combination, please contact us. We'd be happy to answer your questions and provide the most cost-effective solution for your needs.