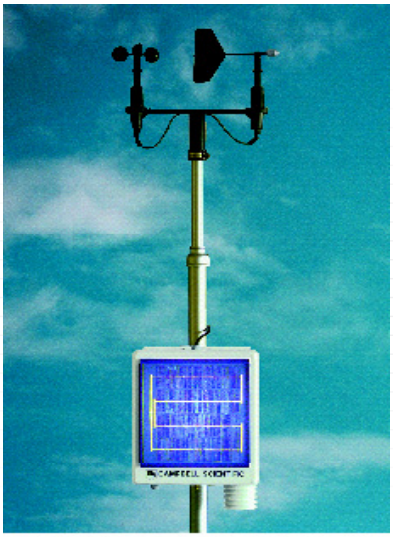
CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

BWS200

Basic Weather Station



Professional Weather Monitoring

Outstanding value for money

Overview

Campbell Scientific weather stations have become the world-wide standard for meteorological monitoring. In use on every continent and in virtually every country, our weather stations are known for their precision measurements, rugged construction, wide operating temperature range and low power consumption.

Now the Basic Weather Station brings Campbell Scientific quality and reliability to an even wider range of applications! When you need a limited number of measurements (wind speed and direction, for example) and are unlikely to need the flexibility of other Campbell Scientific systems, the BWS200 is the ideal choice.

Technical Information

The Basic Weather Station uses a reliable, high-accuracy datalogger. The datalogger is protected by a waterproof/ dustproof enclosure which can be padlocked.
The BWS200 is powered by rechargeable lead-acid batteries. When running the standard program, the integral 5W solar panel will easily keep the batteries charged throughout the year. Additional power may be required where radio communications exceed once a day, for continuous communication connection or where solar panel is obscured or effectiveness reduced by latitude. Please call Campbell Scientific for more details.

Benefits and Features

- Unattended recording of wind speed and direction, air temperature and relative humidity
- Optional measurement of rainfall
- Standard program and user-friendly software included
- Data retrieval and real-time monitoring by direct link to your PC
- Integrated solar panel means the station can be sited virtually anywhere
- Low power consumption capable of measuring solar radiation and ETo (reference evapotranspiration) when combined with the CS300 pyranometer

Typical Applications

- Industry
- Agricultural research
- Ports and harbours
- Landfill sites

The standard BWS200 consists of a weatherproof enclosure which contains the datalogger and power supply, and comes complete with a solar panel and basic range of sensors.

The BWS200-Wireless, includes a radio transmitter for communication up to 1 km (line-of-sight).

With the addition of an optional CS300 pyranometer for the measurement of solar radiation. The supplied software will calculate the resulting ETo (reference evapotranspiration) values.

We can also supply a simple 2 m pole mount (model SPM2 as shown) to support the enclosure and wind sensors. Alternatively, you can use your own mounting hardware; please ask for details.

Specifications

All sensors are powered directly from the datalogger and need no external signal conditioning. Descriptions and brief specifications are shown below. Further details of all equipment is available on request.

Datalogger
Campbell Scientific Model CR200X/CR216X – fully programmable, with non-volatile flash memory.

Accuracy of Analogue Measurements: ±0.25% (typical)

Memory: Up to 128,000 data values

Typical Current Drain: Ranges from 0.2mA quiescent to 3mA during analogue measurement (no radio)
Datalogger Guarantee: 3 years

Wind Speed and Direction
R M Young Wind Sentry combined anemometer and windvane – supplied complete with a cross-arm which mounts onto a 25–27 mm outside diameter tube.

Wind Speed Range: 0 to 50ms^{-1}
Wind Speed Accuracy: ±0.5ms^{-1}
Stalling Speed: 0.5ms^{-1}
Wind Direction Accuracy: ±5°

Temperature and Relative Humidity
CS215 – supplied complete with radiation shield for protection from direct sunlight and rainfall; mounted directly onto the BWS enclosure.

Temperature Accuracy: ±0.3°C at 25°C, ±0.4°C over +5 to +40°C / ±0.9°C over -40°C to +70°C
RH accuracy: (at 25°C) ±2% over 10–90%, ±4% over 0–100%

Rainfall Measurement (Optional)
The ARG100 Tipping Bucket Raingauge, if purchased, is fixed to the ground on a separate concrete slab.

Sensitivity: 0.20 mm of rain per tip
Funnel Diameter: 254 mm
Overall Height: 340 mm

Enclosure, Power Supply and Solar Panel
Enclosure: ENC 10/12 Fibreglass Enclosure internal dimensions 305 x 250 x 120 mm. Supplied complete with mounting brackets for a 25–45 mm vertical pole.

Power Supply: Yuasa NP7/12 recharge-able lead-acid battery rated 7Ah

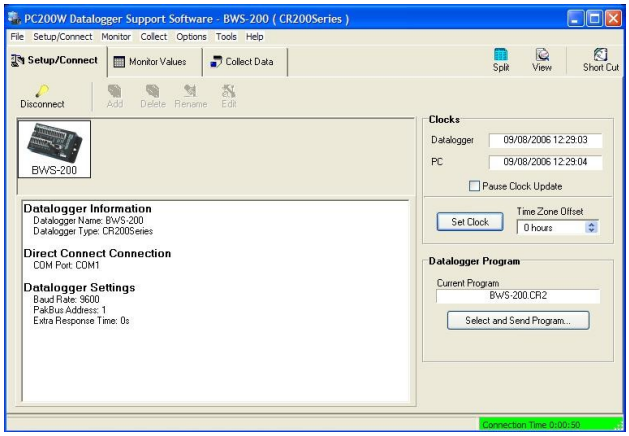
Solar Panel: Model SOP5/X rated up to 4.5W, 260mA; power output guaranteed 5 years.

Radiation Measurement
The CS300 is a silicon pyranometer used to measure the solar energy from the entire hemisphere. It uses a photovoltaic detector which creates a voltage output that is proportional to incoming radiation. Full specification available on request.

Software

Free PC200W software included with the BWS allows you to program the system, view current readings and collect data.

More comprehensive programming, communications, display and analysis programs are available separately.



Siting

The location of your weather station is critical if the measurements are to be meaningful. The type of ground, vegetation, buildings and other obstructions can all affect measurements, and so you need to assess the site carefully. For further advice, talk to Campbell Scientific or your local representative.

Data Storage and Retrieval

The readings and storing data is by linking your weather station to a laptop or desktop PC. Choose one of the methods below, depending on the physical distance between your BWS200 and the PC.

- A direct link via RS232 cable. The link is nominally specified for distances up to 15 m, although longer lengths have been used successfully.
- A "line-of-sight" radio link using a 2.4 GHz radio modem.
- GSM, IP, short range modems also available please call for details.

Other weather products

- For increased flexibility, choose one of our professional weather stations. The range includes configurations approved by The Met. Office.
- The Wind Tracker display unit offers a simple, clear display of wind speed and direction without the need for a datalogger.