CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

CWB100

900 MHz Wireless-Sensor Base

Hub of Wireless-Sensor Network

Polls and stores data from up to 50 wireless sensors

Overview

The CWB100 is the master radio you use in a Campbell Scientific wireless-sensor network. It polls and stores data from up to 50 wireless sensors, and then passes that data to a data logger. Its internal radio has a 902 to 918 MHz frequency range, which is used in the US and Canada.

Benefits and Features

- Internal frequency-hopping, spread-spectrum radio provides longer range and less interference
- Polls and stores data from up to 50 wireless sensors
- Configurable to fit your application

Detailed Description

The CWB100 base station is configured using an A205 CWS to PC Interface and Campbell Scientific's Wireless Sensor Planner, Network Planner or Device Configuration Utility software. The data logger is programmed to interface with the CWB100 and determine a polling interval. After the polling interval has been received, the base station uses that information to poll the sensors prior to being polled by the data logger.

Why Wireless?

There are situations when it is desirable to make measurements in locations where the use of cabled sensors is problematic. Protecting cables by running them through conduit or burying them in trenches is time consuming, labor intensive, and sometimes not possible. Local fire codes may preclude the use of certain types of sensor cabling inside of buildings. In some applications measurements need to be made at distances where long cables decrease the quality of the measurement or are too expensive. There are also times when it is important to increase the number of measurements being made but the data logger does not have enough available channels left for attaching additional sensor cables.

Specifications

Power Source	Data logger	Voltage	4.5 to 22 Vdc

Operating Temperature Range	-25° to +50°C
Operating Relative Humidity Range	0 to 100%
Standby Typical Current Drain	< 1 mA (@ 12 Vdc)
Receive Typical Current Drain	10 mA (@ 12 Vdc)
Transmit Typical Current Drain	20 mA (@ 12 Vdc)
Communication	Serial protocol or USB
Terminal Block Connector	Bi-directional serial data logger connection
USB Port	Computer connection for configuration
Antenna Connector	RPSMA antenna connection
Memory Capacity	Can store data table for up to 50 wireless sensors.
Dimensions	10.8 x 4.4 x 4.4 cm (4.25 x 1.75 x 1.75 in.)
Weight	140 g (5 oz)

Internal 25 mW FHSS Radio

Frequency	902 to 918 MHz
Where Used	US and Canada
FHSS Channel	50
Transmitter Power Output	25 mW (+14 dBm)
Receiver Sensitivity	-110 dBm (0.1% frame error rate)
Standby Typical Current Drain	3 µA
Receive Typical Current Drain	18 mA (full run)
Transmit Typical Current Drain	45 mA
Average Operating Current	15 µA (with 1-second access time)
Quality of Service Management	RSSI
Additional Features	GFSK modulation, data interleaving, forward error correction, data scrambling, RSSI reporting

For comprehensive details, visit: www.campbellsci.com/cwb100