

Water Quality Monitor/Transmitter Buoys

Models CSBUOY-DT, CSBUOY-NS

Campbell Scientific's CSBUOYs are wireless, floating, self-contained packages that allow fish farmers and water resource managers to monitor critical water quality parameters from the convenience of their office. The buoys require a minimal amount of setup and can be deployed anywhere on the pond. These self-contained packages can be easily moved from pond to pond.

Our CSBUOYs house a wireless transmitter and a 7 Ahr, 12 Vdc sealed rechargeable battery in a protective polyethylene buoy. The on-board measurement system measures the sensors and uses spread spectrum technology to transmit data to the office. Under typical conditions using a unity gain antenna, the buoys can transmit data for one mile. When greater distances are needed, a higher gain, 3 dB antenna with a clear line-of-sight can transmit over 10 miles. The on-board battery is recharged by a 5 W solar panel mounted on the buoy.



Completely self-contained, the CSBUOY measures water quality parameters in a variety of environments.

Campbell Scientific offers two CSBUOY models:

Model	Equipment included	Programming
CSBUOY-DT	Buoy Wireless transmitter Solar panel Rechargeable battery Temperature probe Dissolved Oxygen probe Agitator brush	Preprogrammed
CSBUOY-NS	Buoy Wireless transmitter Solar panel Rechargeable battery	Generated by the user using PC400 or LoggerNet software

Specifications

General

CSBUOY-DT Weight:	37 lbs
CSBUOY-NS Weight:	~35 lbs
Environment:	Freshwater and brackish ponds and small lakes; quiet water marine (no wave or tidal activity)

Buoy

Material:	Polyethylene
Dimensions:	47" (119 cm) height, 30" (76 cm) float diameter
Instrument Housing:	6.36" (16.15 cm) OD, 6" (15.24 cm) ID

Specifications (cont.)

Wireless Transmitter

Storage:	512 kbytes Flash Final Storage; data format is 4 bytes per data point (table-based); 60 kbytes Flash (OS/program)
Available Channels:	5 single-ended analog inputs (SE1-SE5), 2 excitation channels (EX1-EX2), 2 control ports (C1-C2), 4 pulse counters (P_SW, P_LL, C1, C2; P_LL used for low level ac; P_SW used for switch closure; P_LL, C1, and C2 can be used for switch closure using the battery voltage and a 20 kOhm pull-up resistor.)
Radio Type:	916 MHz Spread Spectrum Transceiver
Average Continuous Current Drain:	20 mA radio always on, 2.2 mA radio in 1 s duty cycle, 0.6 mA radio in 8 s duty cycle

Antenna

Frequency:	900 MHz
Distance:	5000 ft (1524 m) assuming line of sight
Gain:	0 dBd
Length:	3.25" (8.26 cm)

Solar Panel

Typical Peak Power:	5 W
Voltage @ Peak Power:	17.1 Vdc
Current @ Peak Power:	300 mA
Dimensions:	9.45" (24 cm) length, 10.4" (26.4 cm) width

Dissolved Oxygen/Water Temperature Probe (CSBUOY-DT only)

Membrane Type:	PTFE (Teflon®)
Output at 100% Saturation:	24 to 42 mV
Temperature Range:	0° to 50°C
Accuracy:	±2%
Response Time:	2 minutes to reach 90% of final reading
Minimum Water Flow Rate:	2" (5 cm) per second across membrane
Material:	Delrin®
PRT:	100 Ohm
Power Requirements for Agitator Brush:	12 Vdc, 1.1 A

