

# CB-50 Data Buoy – Quick Start Guide

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The NexSens CB-50 Data Buoy is designed for quick deployment in emergency response situations including industrial spills and natural disasters. The buoy can be deployed from small boats, large vessels or even helicopters. Compatible instruments include turbidity sensors, dissolved oxygen sensors, hydrocarbon sensors, fluorometers, multi-parameter sondes, pressure transducers, and more.

What's Included:

- (1) Buoy hull with data logger port
- (3) Top-side lifting eyes
- (1) Sub-surface mooring eye



# CB-50 Data Buoy – Accessories

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The CB-50 Data Buoy is a platform and can be accessorized with any of the following components or users can configure the buoy with alternatives.

<b>Common Accessories</b>	
SDL-V2	SDL V2 submersible data logger
SDL-V2-C-VZ4G	SDL V2 submersible data logger with Verizon 4G LTE cellular telemetry
SDL-V2-C-AT4G	SDL V2 submersible data logger with AT&T 4G LTE cellular telemetry
M550-F-Y	Solar marine light with flange mount & 1-3 nautical mile range, 15 flashes per minute, yellow
CAGE	Stainless steel instrument cage, 28"
CAGE-EXO1	EXO1 sonde mooring cage with clamps
CAGE-EXO2	EXO2/EXO3 sonde mooring cage with clamps
CB-CCA	Cage anti-rotation collar for CB-Series data buoys
CM-600	Cage mount for water quality instruments
CB-ZA	Sacrificial zinc anode for CB-Series data buoys

# CB-50 Step-by-Step Assembly

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## Attach the cage to the buoy frame:

- 1 Attach the cage to buoy frame using the  $\frac{3}{4}$ " bolt, lock washer and castle nut.
- 2 Tighten firmly with 1-1/8" wrenches or large crescent wrenches. Be sure to flatten the lock washer and lineup the hole in the bolt with the notches in the castle nut.
- 3 Place the cotter pin through the hole in the bolt, and bend the long leg of the pin to prevent the nut from coming loose.



# CB-50 Step-by-Step Assembly

## Understanding the data well

A removable topside foam tower with lid protects the electronics, supports solar marine lights, and offers a convenient lifting point.

An SDL-V2 can be installed in the center of the buoy hull.



# CB-50 Deployment

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## SAFETY FIRST

**Warning:** It highly recommended that buoys are installed by professionals with training in marine safety. Anchors, chains, heavy gear and boat clutter during deployment is unsafe. Care must be taken during deployment to maintain a clean and safe environment.

Use of proper equipment (work boat, lifting rig, gloves, safety footwear, etc.) is essential to safely deploy any buoy system. Buoy systems are heavy and personnel can quickly become entangled with mooring lines and anchors. Safety and flotation gear should be worn at all times when working on or near the water.

**NEVER EVER** work in unsafe conditions, without safety gear, proper equipment or use unsafe practices.



# CB-50 Deployment

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## Installing sacrificial anodes

**Important:** To avoid excessive corrosion on buoy frames and cages, use sacrificial anodes to isolate dissimilar metals in saltwater applications.

Install the CB-Series Buoy Zinc Anode to both the cage and buoy frame. The anode will slowly corrode away. Inspect and replace as needed.



# CB-50 Deployment

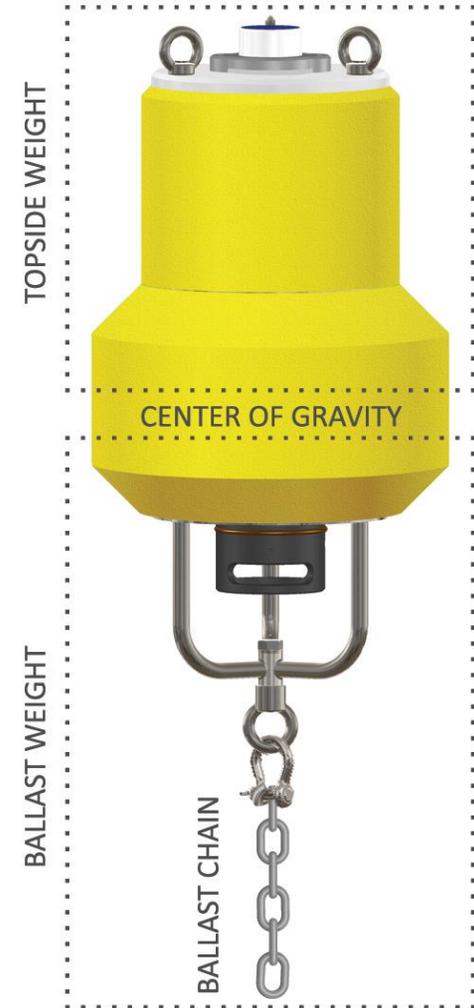
## Understand ballast weight and stability

**Important:** To prevent overturning and ensure stability, additional ballast weight may be needed.

As configured at the factory, the center of gravity of the buoy is near the water surface. A single point mooring line and chain, connected to the eye at the bottom of the cage is typically enough weight to ensure stability.

Any weight added above the water surface must be appropriately counterbalanced by additional ballast weight below the surface. Be sure to keep topside devices lightweight and positioned as low as possible on the tower and bottom side weight centrally located and deep (mounted to the cage eye).

Before deployment, some experimentation may be required to properly balance the buoy. If needed, add 1/2" chain (~2.3lb/ft) or other weight to the bottom of the cage as shown.



# CB-50 Deployment

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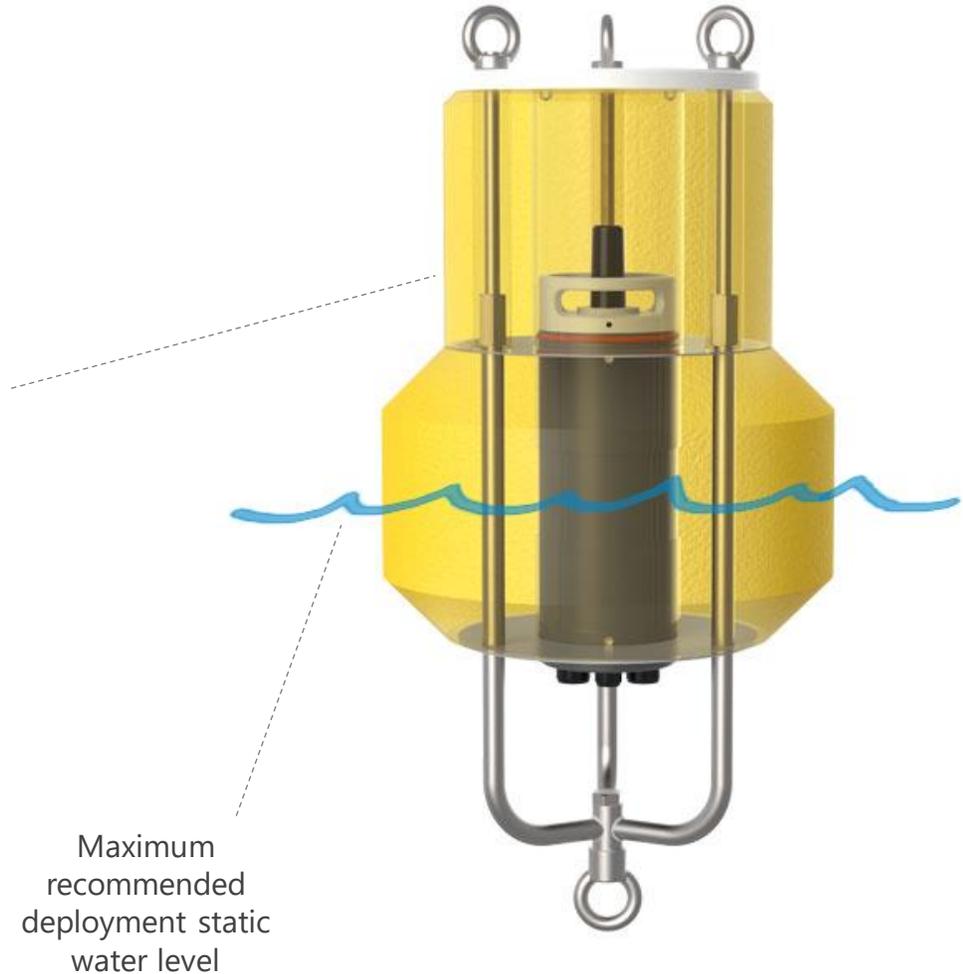
The proper level of submersion for a moored CB-50 buoy equipped with an SDL-V2 is shown.

**Note:** Excess ballast weight may result in the submersion of the SDL-V2 bulkhead and a subsequent decline in both remote communication performance and life of the data logger.

**Recommendation:**

Do not allow the upper float of the CB-50 to be submerged for extended periods of time.

The SDL communication bulkhead should be oriented above the water line under normal deployment conditions.



# CB-50 Deployment

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## Single point mooring

Single-point moorings are used in calm waters when monitoring sensors are attached to the instrument cage or housed in deployment pipes. The sensors are thus protected and less vulnerable to damage caused by subsurface debris, high currents, and entanglement from anchor lines.

In a single-point configuration, a stainless steel mooring line connects the buoy directly to a bottom chain and anchor. At normal pool/stage, the mooring line should be taut, with most of the bottom chain resting on the seafloor. As the water level increases and the buoy rises, the bottom chain is lifted from the floor.

**Important:** *This section contains only general information on the available mooring options for CB-50 data buoys. To develop an effective mooring strategy, a variety of application-specific criteria (water level fluctuations, currents and wave action, debris loads, etc.) must be thoroughly reviewed prior to deployment. NexSens does not endorse any particular mooring strategy for any specific application.*

