

# QUICK START GUIDE

## CB-40 DATA BUOY PLATFORM



Figure 1: CB-40 Data Buoy

### Overview

The NexSens CB-40 data buoy platform is constructed with a closed cell, cross-linked polyethylene foam hull with polyurea coating that provides 40 lb buoyancy. The buoy has a corrosion resistant, stainless steel internal frame with topside lifting eyes and subsurface mooring eyes for the connection of single-point and multi-point mooring systems.

The integrated 4" diameter stainless steel instrument pipe is able to accommodate a variety of internally-powered water quality monitoring instruments including YSI 6-Series & EXO sondes, Hydrolab Series 5 & HL sondes, Eureka Sub 2 & Manta 2 sondes, and In-Situ TROLL 9500 instruments.



### What's Included

- (1) CB-40 buoy hull, 40 lb. buoyancy
- (1) Integrated Instrument Deployment pipe

### Common Accessories

- M550-F-Y LED beacon

### Assembly

The main components of the CB-40 data buoy platform are assembled at the time of shipment. Installation of accessories may be required. Quick instructions are provided in this guide. Visit the online Knowledge Base for more information (see *Additional Information* section).

### Ballast Weight and Stability

To ensure the stability of a CB-40 buoy system, considerations to mooring strategies, sensor locations, and ballast weight must be made.

For single-point mooring configurations, mooring chain and lines connected to the bottom of the cage may provide adequate ballast. For multi-point configurations, the mooring hardware does not contribute to the ballast weight.

Before deployment of a CB-40 system, some experimentation may be required to properly balance the buoy. If needed, a 1/2" chain (~2.3lb/ft) or other weight may be added to the bottom of the instrument cage.

### Saltwater Deployment

Sacrificial zinc anodes should be used whenever a buoy is deployed in a saltwater environment to prevent corrosion. These zinc anodes must be inspected and replaced as needed.

### Mooring Configurations

*This section contains only general information on the available mooring options for CB-40 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*

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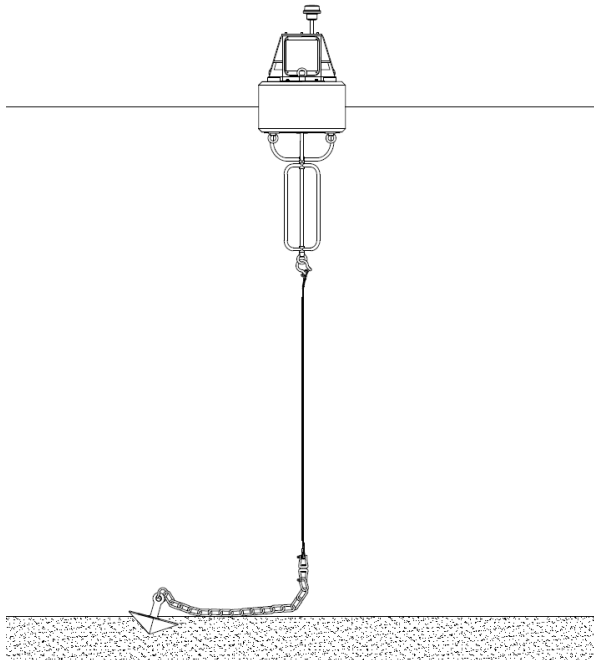
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*prior to deployment. NexSens does not endorse any particular mooring strategy for any specific application.*

### 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 floor of the water body. As the water level increases and the buoy rises, the bottom chain is lifted from the floor.

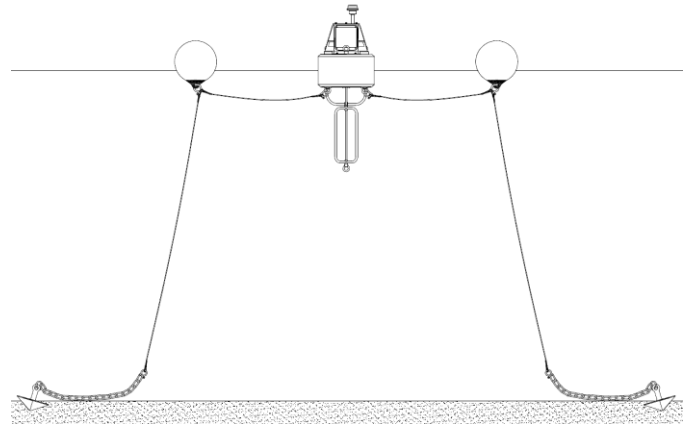


**Figure 2:** Typical Single-Point Mooring Configuration

### Two-Point Mooring

Two-point moorings are commonly used when monitoring sensors are deployed in the water column below the buoy. In this setup, the mooring lines are pulled taut away from the buoy, freeing the water column for a suspended sensor line.

In most two-point configurations, mooring lines connect the data buoy to small marine marker floats, often located on the water surface. These marker floats are shackled to another mooring line that runs to the floor and connects to a bottom chain and anchor assembly. Additional subsurface marker floats may also be used in some applications. As in single-point systems, the bottom chain prevents buoy submersion as the water level fluctuates.



**Figure 3:** Typical Two-Point Mooring Configuration

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### Safe Deployment

*Personnel safety is the number one priority when deploying a data buoy. 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.*

*Remember to perform a complete system test on shore prior to deployment. Learning the nuances of the system is much better handled on shore or in a lab rather than in the field.*

### Specifications

- **Hull Dimensions:** 14" (35.56cm) outside diameter; 20" (50.80cm) tall
- **Instrument Pipe Dimensions:** 3.87" (9.83cm) inside diameter; 48" (121.92cm) tall
- **Weight:** 38 lbs. (17.24kg) no payload; 45 lbs. (20.41kg) with sonde and solar marine light
- **Buoyancy:** 40 lbs. (18.14 kg)
- **Hull Material:** Cross-linked polyethylene foam with polyurea coating & stainless steel deck
- **Hardware Material:** 304 stainless steel
- **Mooring:** 1, 2, or 3 point

### Additional Information

Additional information and complete instructions for the CB-series data buoy platforms are available in the NexSens online Knowledge Base:

<http://www.nexsens.com/knowledge-base>

