

DATA BUOY DB 4700

D376 - October 2007



Data Buoy DB 4700

is a unique Data Collecting System for Met/Ocean Parameters. The Buoy can accommodate a selection of sensors depending on customer's request. Each Data Buoy is delivered as an AADI Engineering solution to benefit the customer requirements.

Subsea Parameters:

The Buoy can measure Wave Height and Period, Sea Current Speed and Direction, Sea Temperature, Dissolved Oxygen, Conductivity, Turbidity and Salinity

Meteorological Parameters:

Air Pressure, Air Temperature, Humidity, Visibility, Net and Solar Radiation, Wind Direction and Speed.

Data Access:

Data from the Buoy can be transmitted Real-Time and/or stored internally.

Buoy Features:

Rugged and Compact Construction, Modular Design, Potted Waterproof Units, Low Power Consumption and Low Maintenance. The Buoy is easy to deploy and use. The Buoy has a Storage Compartment for external equipment.

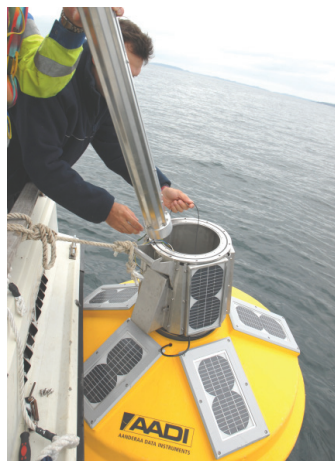
Application Areas:

Ports, Harbours, Fjords, Coastal Waters and other areas depending on the depth and wave conditions.

The Sensor Ring mounted on top of the Mast Section can fit 7 Meteorological Sensors.



The Mast Section is equipped with a Mini Tri-Lens Reflector (The reflector coverage is 330 degrees) and a Sealite Flashing Light, SL 15.



The buoy is of modular design which enables a variety of applications.

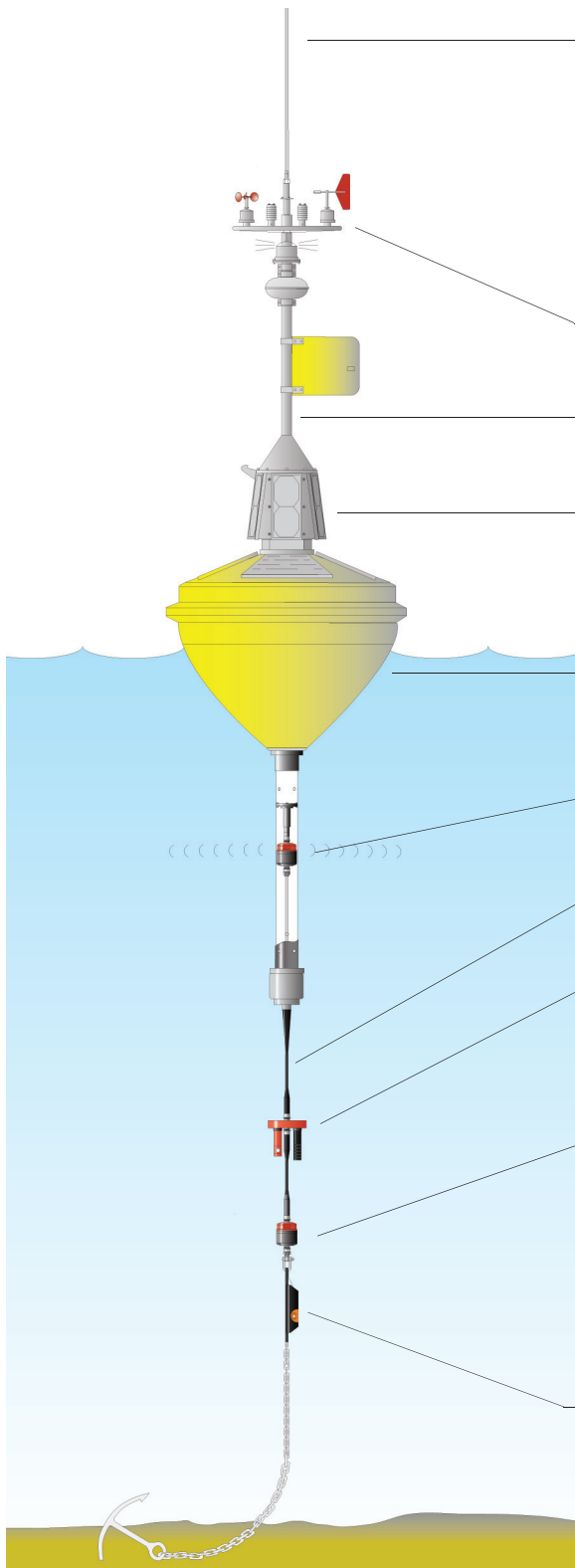
The Central Buoy Module can be pulled out of the Buoy Hardware without disconnecting the sensor string. Some service can be performed offshore.

The Buoy is Solar Cell powered. The panels are positioned in two angles to maximize the effect from solar radiation and reflections from the sea.

The Buoy Hardware is a solid structure; the walls are made of Polyethylene. The hardware is bumper protected.

Fully Equipped Buoy

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Communication Solution (Optional):

VHF Data Transmission, Kit 3916 (141 - 143 MHz)

UHF Data Transmission, Kit 3917 (450 - 458 MHz)

Orbcomm Communication, 4594

GSM Communication Unit, 4595

Argos Transmitter Available on Engineering request.

AADI Radio Modem Available on Engineering request.

Iridium Transceiver Available on Engineering request.

Sensor Ring 4568 (Optional) for a wide range of meteorological parameters, refer B152. Up to 7 sensors can be connected.

Mast Section with Wind Vane, Flashing Light and Radar Reflector.

Central Buoy Module 4575 with 4 5.5W Solar Cell Panels, **Datalogger 3860A**, a 12V/ 28Ah rechargeable **Battery**, **Control Unit 4150**, optional **Data Storage Unit 2900X**. Optional sensor: **Wave Height Sensor 3595**.

Buoy Hardware 4527 containing 5 5.5W Solar Cell Panels. The buoy is a solid structure with polyethylene walls. It incorporates a payload counterweight. The net buoyancy is 600kg.

1 **Doppler Current Sensor 4100/4290-series** (Optional) can be installed inside the pvc buoy tube, which has acoustic permeability.

The Sensor String (Optional) can support **25 submersible sensors**, refer **B152**.

Sensor Disk 3822 carrying up to 3 sensors:

- **Conductivity/Temperature Sensor 4119**
- **Turbidity/Temperature 3712**
- **Oxygen Optode 3930**

Up to 7 **Doppler Current Sensor 4100/4290-series** (Optional) can be moored in-line for measurements in several depths. **Cable** for interconnecting DCS 4100/4290-series.

Temperature String (Optional) with up to 25 thermistors measuring the stratification in a column of water.

Fastening Fixture 3823/3923 (Optional) for one submersible sensor.

For Mooring advice, contact AADI Engineering Department.

Engineering Solution:

The Data Buoy is an AADI Engineering Solution to fit the specific application in which the Buoy is used; the Buoy is complete as requested by the customer. Each Buoy has been tested prior to delivery.

AADI enclose a complete System Drawing for easy installation of the Buoy System. The Buoy System can be delivered as a Turn Key Solution.

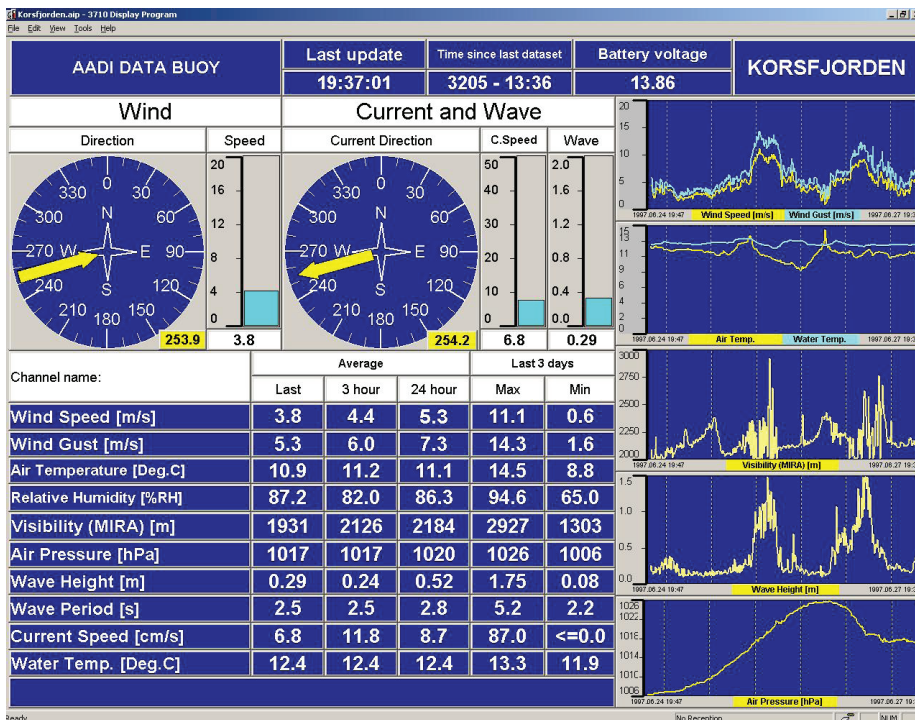


Unique, Combined Met/Ocean Data Buoy for e.g.

Coastal Management, Storm Warnings, Dredging, Traffic Monitoring, Environmental Monitoring and Research.



Display Program 3710



Refer Data Sheet D318 for more information about Display Program 3710.

A 30-day test program can be downloaded from our Internet site at: www.aadi.no.

Data Display Program 3710

- The Display Program 3710 is designed to collect, save and display data from AADI Aanderaa datalogging equipments.
- Collect data from up to 10 monitoring stations or buoys.
- Display data on the PC monitor.
- Data can be saved to files for further analysis in e.g. MS Excel.
- The program converts raw data in RS-232C format to data in Engineering Units.

Customized Display with five basic types of graphs:

- a bar graph to show e.g. the water level.
- a directional compass for wind or current.
- a diagram display to show historical development of for example air temperature.
- a text display to show static text.
- a number display to show exact values.

VHF Data Transmission Kit 3916 (141 - 143 MHz)

The radio set is a low power, short range system, operating in the VHF band on frequency 142,000 MHz, and requires free sight between the transmitter and the receiver, 6-8 km range over sea or 10-40 km range over land, depending on local conditions to function properly.

A typical application for the radio set is transmitting a message from a Data Buoy every 10 minutes.

UHF Data Transmission Kit 3917 (450 - 458 MHz)

To convey data in real-time from stations or buoys, UHF radio communication has been found to be the best and least expensive solution.

It is a, as above, low power, short range system, operating in the UHF band on frequencies between 400 and 500MHz, and requires the same conditions.

Orbcomm Communication 4594 for DB 4700

To be used when global coverage is needed in areas where no other communication is possible.

Note: data can be received as e-mail from the nearest "Land Earth Station". A mailreader software is required to display and store data in a database.

GSM Communication Unit 4595

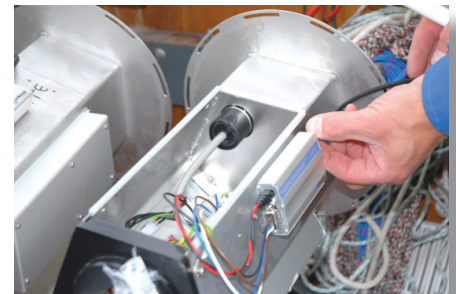
Makes the design of a network of stations easy.

Makes upgrading of existing station to GSM easy.

Low power consumption, less than 10mA in standby mode.

Reliable two way communication. Enables remote programming and data-downloading from Datalogger3860A.

Communication Equipment is mounted in a compartment in the Central Buoy Module.



Buoy Specifications

- Datalogger:** Up to 30 channels. Refer Data Sheet D337.
Recording Interval: 0.5 - 180 minutes and Non-stop (4 seconds per channel).
Remote Start: 5V positive pulse.
Resolution: 10-bit binary. Accuracy: ± 1 -bit binary.
- Control Unit:** Interface for all Buoy Equipment. Provides 15V or 11V output.
- Sensor Ring:** Fits up to 7 Meteorological sensors, Communication antenna and optional GPS.
- Flashing Light:** Sealite Flashing Light, SL 15. Range: 1 Nautical mile. Output: 0.45W solar module. 4 ultra-high intensity LEDs. Intensity: > 1.5 cd. Battery: 1.6Ah, high grade userreplaceable NiMH- batteries. Horizontal Output: 360 degrees. Vertical Divergence: 9 degrees. Waterproof rating of IP68. Bird-deterrent spike.
- Radar Reflector:** Mini Tri-Lens Reflector. Reflective Cross Section: 0.6 -1 m². Reflector coverage: 330 degrees.
- Submersible String:** Up to 25 parameters can be fitted on customer request.
- Buoy Hardware:** Solid structure with Polyethylene walls. Net Buoyancy of 600kg. It incorporates a payload counterweight of 50kg. The Buoy Hardware will float even if it is run over by boat and the Polyethylene walls are punctured.
- Solar Cells:** 9x5.5W. Total: 2A maximum charge. Nominal output 17.2V.
- Batteries:** 28Ah capacity. Maximum 15V output. Voltage Regulated to 11V in the Control Unit.



The Buoy is cone-shaped with a low centre of gravity; this provides High Stability and reduces wear and tare of Cables.

The Buoy can be deployed and retrieved using only a small boat equipped with a crane and capstan.

5851 BERGEN, NORWAY

TEL. +47 55 60 48 00

FAX. +47 55 60 48 01

<http://www.aadi.no>

e-mail: info@aadi.no

Representative's Stamp