

# ARGOS DRIFTER

## BRIGHTWATERS MODEL 110



Surface-following Davis/CODE drifter hull, available in two color schemes. High visibility colors help prevent shipstrikes and aid in retrieval, low-visibility colors minimize nuisance pickup of drifters by boaters.



Long duration hull used with deep drogue.

**OVERVIEW.** The Model 110 Argos drifter is a current-following (Lagrangian) drifting buoy. It is released in a body of water and moves with the currents over a period of days, weeks, or months. Onboard electronics transmit a radio signal that is detected by the ARGOS satellite network, giving location of the drifter and optional sensor data several times per day from anywhere in the world. Lagrangian current data provided by Argos drifters are useful in current measurement, oil spill or floating debris tracking, discharge dispersement calculations, and similar studies.

**PHYSICAL CHARACTERISTICS.** Two physical configurations are available:

- **Davis drifter.** Drifter design is similar to the Coastal Ocean Dynamics Experiment (CODE) drifter developed at the Scripps Institute of Oceanography. This design (also known as a Davis or SCULP drifter) provides excellent coupling to the surface layer and exhibits little wave rectification. The drifter is small and light and is easily deployed and retrieved by hand. An optional conversion kit allows the drifter to be changed to a deep drogued configuration in the field.
- **Long duration drifter.** Modified CODE design for use with deep drogue. Cables and connections are optimized for resistance to chafing and fatigue from wave action.

**SENSOR OPTIONS.** Up to eight sensor channels can be telemetered through the Argos data channel. Data can be taken from time of transmission or telemetered as an even time series. Available sensors include:

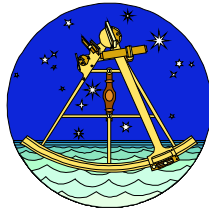
- Battery voltage.
- Sea surface temperature.
- Conductivity/temperature. Fouling resistant inductive design. Individually calibrated sensors. Typical accuracy 0.05 C, 0.05 mmho/cm. Resolution 0.01 C, 0.01 mmho/cm.
- Waterproof connector for external (user-supplied) sensors.

**DOWNLINK COMMAND CAPABILITY:** The Model 110 uses the newest Argos-3 Platform Messaging Transceivers (PMTs) that include downlink command capability. The end user can reprogram the drifter after deployment by sending commands through a web-based interface. This capability can be used to for example change the sampling rate of sensors or discontinue transmissions from a drifter that has moved out of a study area, thus preventing unwanted satellite use charges.

**ENDURANCE.** Considerable power savings can be realized by using the pass prediction capability of the Argos-3 PMTs to only transmit during actual satellite passes (note this capability can be turned off to allow tracking and retrieval of deployed drifters). Endurance of the drifters depends on exact sensor load, sampling setup, and transmission characteristics but can easily exceed one year.

**SERVICEABILITY.** Unlike most competing products, our drifters are designed to be reused. Although Brightwaters offers complete refurbishing services, most routine maintenance can be accomplished by the end user. The drifter hull can be opened to change batteries. Replacement battery packs are simple to make locally or can be ordered from Brightwaters. External parts such as sails or floats are easily replaced if damaged.

*Brightwaters Instrument Corporation has supplied affordable semicustom and full custom scientific and oceanographic equipment to governments, universities, and the private sector since 1990.*



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