

ARVOR C

Coastal profiling float

ARVOR-C is a subsurface profiling float designed to operate in coastal environment and perform oceanographic measurements as a pseudo-eulerian station.

Its design has been optimized to reduce its drift thanks to a seabed standby and anti-drift claws, an optimized profiling speed (~25 cm/s), and a short data transmission duration.

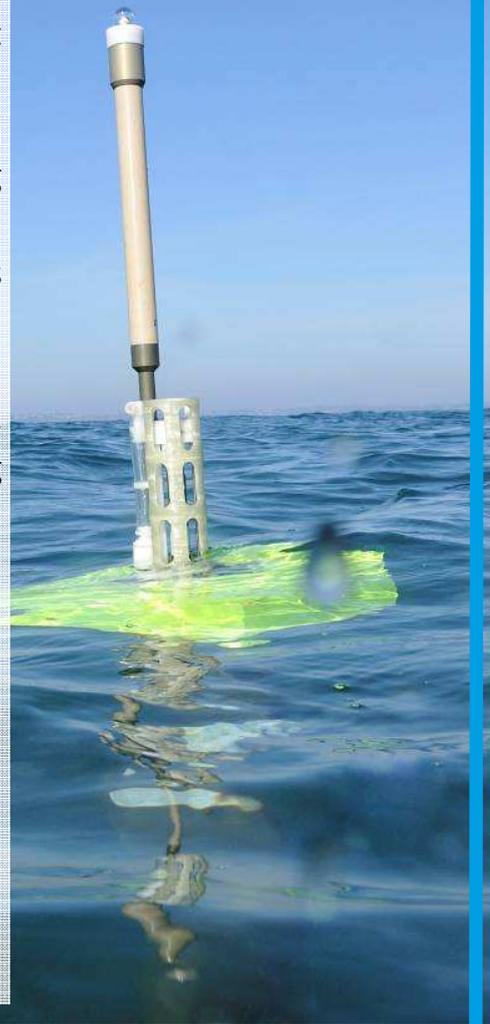
It can perform more than 300 profiles, and transmits its data in real time via the Iridium satellite system.

The ARVOR-C is fitted with "ARGO" used CTD.

The design of the ARVOR-C has used elements and know-how used in the ARVOR and PROVOR offshore profiling floats range.

Main characteristics:

- Virtual mooring
- Sampling over the entire water column
- Up to 300 cycles (lithium cells)
- Operation depth : 300 meters
- Up to one set of measure per meter
- Light and easy to deployd (22kg)
- "Sea-Bird" proven CTD metrology
- Two ways Iridium transmission & remote control
- Self ballasted



Profiling floats

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INSTRUMENTATION

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ARVOR C

Developed in industrial partnership with Ifremer



Profiling floats

TECHNICAL SPECIFICATIONS TYPE ARVOR-C (Coastal)

SBE 41 CP manufactured by Seabird electronics

- Salinity
 - Range 0 to 40 PSU
 - Initial accuracy ± 0.003 PSU
 - Observed drift < 0.01 PSU / 5 years
- Temperature
 - Range -5° C to 35° C
 - Initial accuracy $\pm 0.002^{\circ}$ C
 - Observed drift $< 0.002^{\circ}$ C / 5 years
- Pressure
 - Range 0 dbars to 2100 dBars
 - Initial accuracy ± 2.4 dBar
 - Drift < 5 dBar / 5 years

TELEMETRY

IRIDIUM transmission

DATA TRANSMITTED

One (T, S) averaged per meter

TRANSMITTED RESOLUTION

- Salinity 0.001 PSU
- Temperature 0.001°C
- Pressure offset 1 cbar (reseted when surfacing)

POSITIONNING

GPS receiver 12 channels

FLOAT DIMENSIONS

Overall Length 195 cm with antenna
 Hull Length 140 cm
 Hull Diameter 11 cm
 Damping and floating collar 29 x 29 cm
 Weight 22 kg

FLOAT CONSTRUCTION

Hull Anodized aluminum casing
 High pressure synthetic foam for floatation

OPERATION FEATURES

Operation depth: 300 dBars
 Number of profiles: up to 300 cycles
 Operating temperature: -2° C to 35° C
 Operating life 4-5 years at sea
 Power supply: Lithium battery

STORAGE CONDITIONS

Temperature -20° C to $+70^{\circ}$ C (-4° F to $+158^{\circ}$ F)
 Maximum storage time before use: 1 year
 Real time clock saved by separate battery

BUOYANCY MANAGEMENT

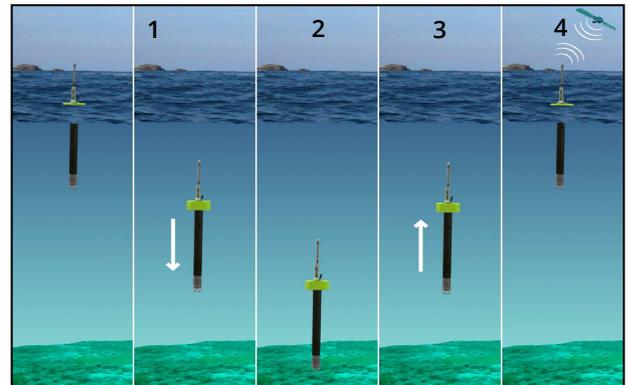
Principle: Oil ballast with pump & valve

USER INTERFACE

- A - Bluetooth User Interface
 - Mission programming, float checking, etc.
 - Terminal Personal Computer
- B - Activation by magnetic switch
 - Remove magnet launches the float
- C - Remote control
 - Modification of mission parameters via Iridium downlink



TYPICAL CYCLE



1/ Descent

2/ Seabed standby until pre-programmed pop up time

3/ Pop up and measurements

4/ At surface :

- GPS fix acquisition
- Reading for new set of parameters (remote control)
- Data transmission (Iridium)



Pictures and drawing thanks to Ifremer and Olivier Dugournay courtesy

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INSTRUMENTATION



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