

ARVOR I



Profiling floats

Autonomous ARGO profiling float
with Iridium transmission
Salinity - Temperature - Pressure

ARVOR I provides salinity, temperature and pressure profiles with position information thanks to an integrated GPS receiver. Data are transmitted via Iridium satellites network.

Bluetooth technology enables easy and fast configuration before mission. Iridium downlink enables parameters modification remotely as soon as the ARVOR I surfaces.

With self-ballast and very light design, ARVOR I can be deployed by one person.

It capitalises on both the know-how of Ifremer in floats activities and designing qualified subassemblies and of nke on industrial product development.

Qualified technology for ARGO project

- Sea Bird electronics + RBR proven CTD metrology
- GPS positioning
- Iridium SBD transmission
- Up to 300cycles, 10 days (SBE) // 400cycles (RBR)
- High sampling rate capability up to 2000 pts
- Easy connectivity using RF Bluetooth
- Fully operational, light and easy to deploy float
- Weight 20 kg
- Self-ballasted float
- In option: DO sensor
- Recovery possible (EOL with Iridium telecommand)

Picture Ifremer

nke
INSTRUMENTATION



ARVOR I

Developed in industrial partnership with Ifremer

Data collection with Iridium transmission

TECHNICAL SPECIFICATIONS TYPE ARVOR I float

FLOAT DIMENSIONS

Overall Length 225 cm with antenna
Hull Length 170 cm
Hull Diameter 17.3 cm
Weight 20 kg

FLOAT CONSTRUCTION

Hard anodized aluminum casing

BUOYANCY CONTROL

Principle Oil ballast with pump & valve
Positioning accuracy $\pm 30\text{m}$ (98.4 ft.)

OPERATION FEATURES

Operation depth until 2000 dBar
Number of profiles capabilities
Up to 300 cycles @ 110 pts 2000 bars/CTD (SBE)
Up to 400 cycles @ 110 pts 2000 bars/CTD (RBR)
High sampling capability: up to 2000 pts / profiles
Number of profiles programmable
Operating temperature -2°C to $+35^{\circ}\text{C}$

POWER SUPPLY

Lithium cells
Operating life up to 4.5 years at sea

USER INTERFACE

A - Bluetooth User Interface

Mission programming, float checking, etc.
Terminal Personal Computer

b- Fan tail ready

Activation by magnetic switch
Remove magnet launches float and triggers Argos
Transmission test

TELEMETRY IIRIDIUM system

Data transmission : Iridium « 9602 » transceiver, helicoidal antennae. Duration on surface approx. 10 mn

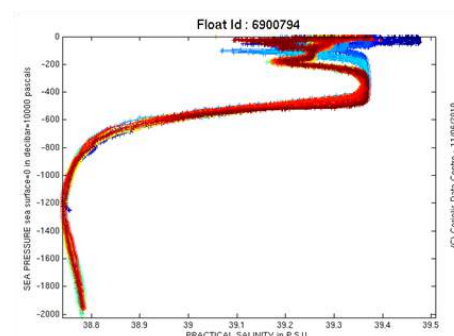
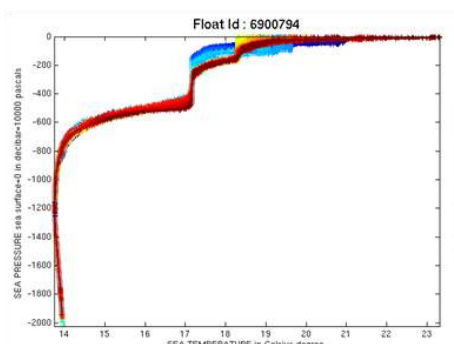
Resolution :

Salinity 0.001 PSU
Temperature 0.001 $^{\circ}\text{C}$
Pressure 0.1 dbar

Position: acquired by GPS receiver, transmitted in Iridium messages

STORAGE CONDITIONS

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



SBE 41 CP with pump

Salinity

Range 0 to 40 PSU
Initial accuracy ± 0.003 PSU
Observed drift < 0.01 PSU / 5 years

Temperature

Range -5°C to $+35^{\circ}\text{C}$
Initial accuracy $\pm 0.002^{\circ}\text{C}$
Typical stability 0.0002°C per year

Pressure

Range 0 dbars to 2100 dBars
Initial accuracy ± 2 dBar
Typical stability 0.8 dbar per year
Offset reset before dive at each surfacing



RBRargo³ C.T.D

Conductivity

Range 0 to 85 mS/cm
Initial accuracy ± 0.003 mS/cm
Typical stability 0.10 mS/cm per year

Temperature

Range -5°C to $+35^{\circ}\text{C}$
Initial accuracy $\pm 0.002^{\circ}\text{C}$
Typical stability 0.002°C per year

Pressure

Range 2000 / 4000 dbar
Initial accuracy $\pm 0.05\%$ full scale (FS)
Typical stability 0.05% FS



Oxygen Optode 4330

Oxygen concentration

Range 0 to 1000 μM
Resolution < 0.1 μM
Accuracy < 2 μM or 1.5%

Oxygen saturation

Range 0 to 300%
Resolution 0.05%
Accuracy $< 1.5\%$



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