

32 bit digitizer
Ultra Low Power Consumption
Compact Flash Data Storage
1-250 samples per second
Continuous Recording Mode
3 seismic ch, 1 hydro ch
Wide band seismic response
1000V/m/s sensitivity
OCXO or Atomic Clock Timing
Advanced autoDPLL calibration
$1.5 \times 10^{-10}$ time drift
GPS time synchronization
Self drift calculation
Timed or Command release
Submersible up to 12.000m
Operation Range: -20+70oC



The OBS electronics and battery are housed inside a 43cm glass sphere. A plastic hat covers the glass sphere for protection. The three-component geophone casing is placed outside of the sphere, held by a side arm. The casing is dropped automatically 3-4 hours after the instrument has reached the sea bottom, because of its weight. The OBS is attached to the metallic base with a release mechanism, the principle of operation of which is based on the electrolysis of a stainless steel wire. Release is activated by a hydro acoustic command from the surface or through a timing device. The OBS has also some auxiliary parts in order to help the recovery: a red flag, a radar reflector, and a flashing light. Additionally a VHF radio beacon can be attached to the OBS for detection from large distance in a wavy ocean.



**SENSOR:** A special designed sensor casing is provided, to support a pressure of 1200 atm. The coupling has been optimised in order to maximise sensitivity.

The electronics have been designed according to the force-balance principle in order to extend the frequency band from 0.2Hz to 98Hz, and to increase sensitivity to 1000V/m/s.

**DIGITIZER-RECORDER:** The digitizer has three seismic and one hydrophone channels.

The recorder stores the data in a removable Compact Flash Card (CFC).

The recording operating system supports the FAT-32 file system (DOS compatible), allowing the use of large volume CFC's. A 64GByte CFC stores 4-channel data, sampled with 250sps, for a period of at least 4 months. The digitizer provides very high dynamic range, greater than 135Bb.

**TIMING:** Two versions of the OBS-DPLL unit are available, one that uses an extremely precise OCXO crystal clear oscillator, accuracy +/- 5ppb ( $5 \times 10^{-10}$ sec) and another version that uses an Atomic Clock with  $1.5 \times 10^{-10}$  sec precision. Both are synchronized initially from a 12 channel GPS receiver. After the end of the recording process, when the OBS is out of the water, the GPS can be switched on, allowing the system to measure the overall drift of the acquisition period.

*When the Earth whispers we are there*

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