

IDRONAUT BUOY 601 PROFILER

with CELLULAR PHONE LINK

MARINE SCIENCE, LIMNOLOGY, AQUACULTURE, WATER QUALITY MONITORING

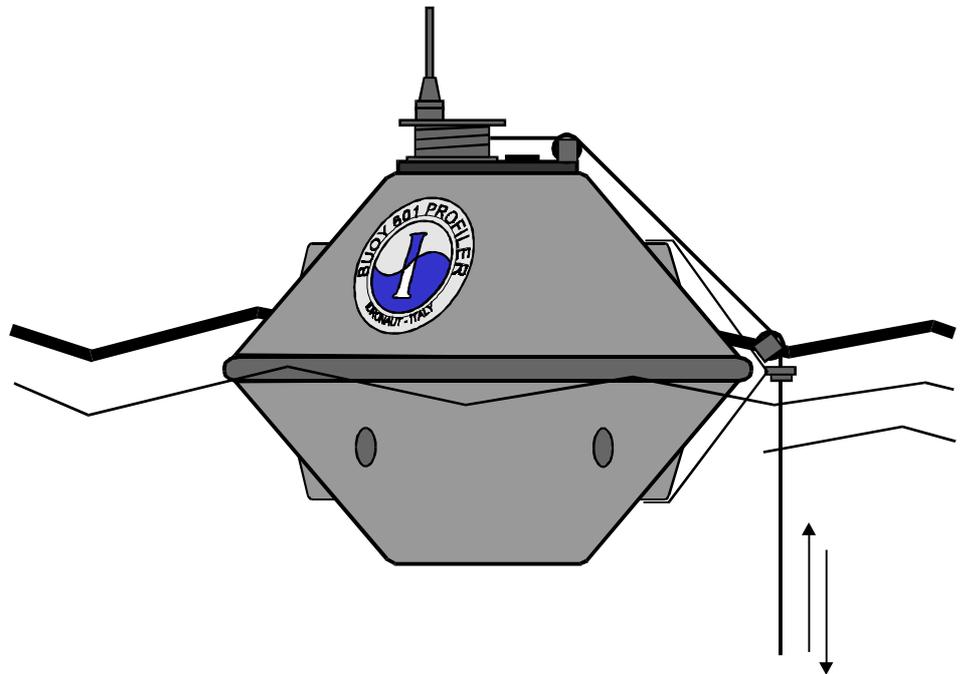
The BUOY 601 PROFILER can be moored in place quickly, without special tools; the buoy can be easily moved by towing with a small vessel.

The BUOY 601 PROFILER is equipped with the OCEAN SEVEN 301 Multiparameter Probe which has been designed for oceanographic application and uses very reliable, accurate; and drift-free high quality sensors, associated with advanced and innovative integrated antifouling systems. The computer-driven winch is located on the top of the buoy hull that contains the Controller, the Modem and the Cellular Phone Link Modules (or UHF Radiomodem). The winch performs automatic vertical profiles with the OCEAN SEVEN 301 Probe which measures depth, temperature, conductivity, salinity, dissolved oxygen, pH and oxidation-reduction potential.

The winch standard cable length is 20 meters of 7 mm polyurethane coaxial armored cable. The buoy is manufactured from glass reinforced plastic (GRP) with stainless steel AISI 316 inserts and internally filled with polyurethane foam. A rubber bumper is fitted around the buoy at water level. Eyebolts are provided for lifting, lowering into water and for mooring. The size and weight of the buoy (1 meter diameter - 160 Kg) allow easy handling and transport. The hull holds 8 rechargeable batteries (12V, 36 A/h each) giving 3.5 KW hours of reserve power, thereby eliminating the need for solar panels which are particularly failure-prone in a marine environment.

The BUOY 601 PROFILER is equipped with the Controller Module which contains all the hardware and software to supervise the buoy operations, from the winch movements to the internal diagnostics functions.

The Controller internal circuits are normally switched off, waiting for the next acquisition time, in order to start the profile operations. In this 'idle' state the buoy drains very little current from the batteries, ensuring long periods of stand-alone activity.



The acquired data is buffered by the Controller, awaiting the 'calls' from the Land-Based Station. Once the communication is established, the buffered data flows in CRC controlled messages from the Buoy to the Land-Based Station. Communication occurs at programmable time intervals.

From the Land-Based Station, it is also possible to modify the Buoy operating parameters (profile type, data acquisition interval, etc.). The system can operate independently for more than three months, depending on the number of profiles programmed.

The core of the Land-Based Station is the REDAS-REmote Data Acquisition Software - which supports the data transfer protocol, a series of data base access functions, and the creation of bidimensional and tridimensional plots. The Land-Based Station includes an MS-DOS Personal Computer and a Modem or UHF Radiomodem.

More than 50 Buoy 601/701 Profiler have been already installed.

OCEAN SEVEN 301 MULTIPARAMETER PROBE SPECIFICATIONS

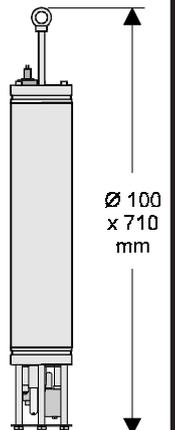
| Parameter | Range | Accuracy | Resolution |
|--------------|------------------|-----------|------------|
| Pressure | 0 ... 300dbar | 0.25%f.s. | 0.1dbar |
| Temperature | -1... +50°C | 0.01°C | 0.004°C |
| Conductivity | 0 ... 62mS/cm | 0.02mS/cm | 0.004mS/cm |
| Oxygen | 0 ... 50ppm | 0.1ppm | 0.01ppm |
| | 0... 500%sat. | 1%sat. | 0.1%sat. |
| pH | 0 ... 14pH | 0.05pH | 0.01pH |
| Redox | -1000 to +1000mV | 10mV | 1mV |

Sensors time constant: 50 msec., except for pH, Redox and Dissolved Oxygen sensors that have 3 sec.

A probe version with conductivity range for fresh water is also available:

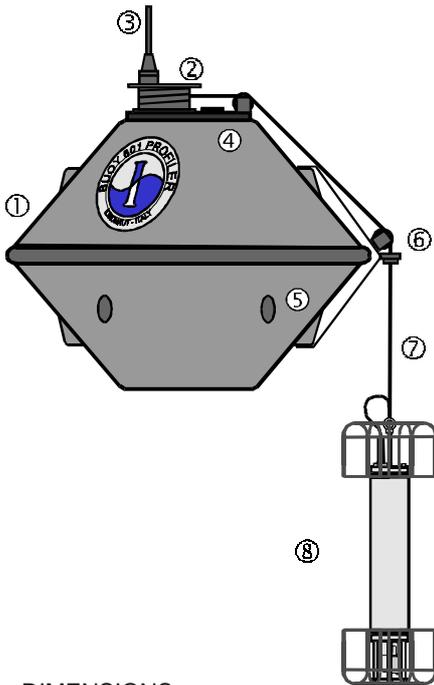
| Range | Accuracy | Resolution |
|--------------------|--------------|----------------|
| 0..6200 μ S/cm | 2 μ S/cm | 0.4 μ S/cm |

See OCEAN SEVEN 301 leaflet for further information.



BUOY601 PROFILER

- ① Hull, contains the Controller, the Modem and the Cellular Phone Link Modules (or the UHF Radiomodem), and Batteries.
- ② Computer driven winch.
- ③ Marine antenna.
- ④ Connectors.
- ⑤ Mooring eyes.
- ⑥ Wheel and pulley support for cable and Multiparameter Probe.
- ⑦ Polyurethane coaxial armored cable.
- ⑧ OCEANSEVEN301 Probe



DIMENSIONS

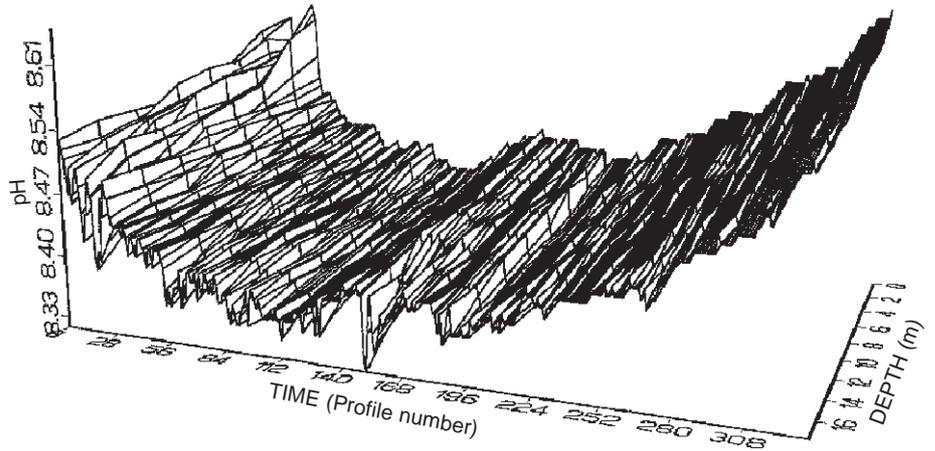
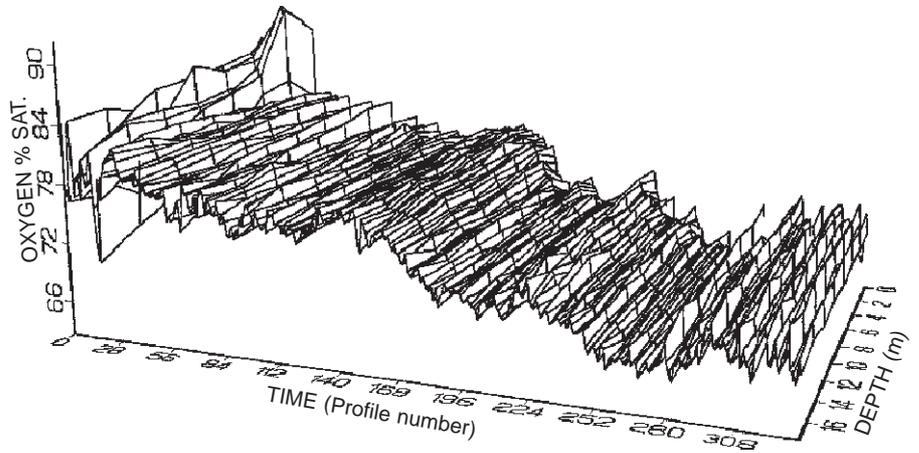
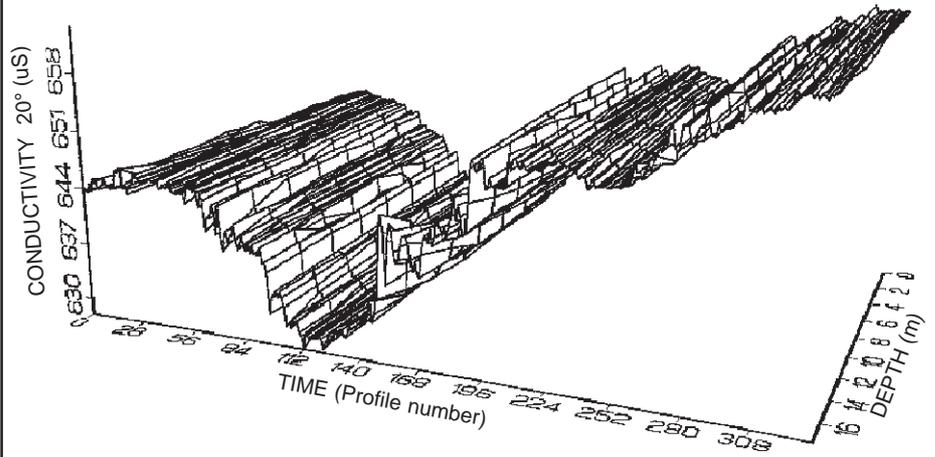
| | |
|--------------------------|---------|
| Diameter: | 1050 mm |
| Buoy inside access hole: | 350 mm |
| Height: | 800 mm |
| Weight: | 160 Kg |

SYSTEM OPTIONS:

- UHF RADIOMODEM**, for radio data transmission
- SOFTWARE**, for operation with up to 20 Buoy Profilers.
- PHOTOVOLTAIC POWER MODULE**.

3D OUTPUT PLOTS

THAMES WATER UTILITIES - Wraysbury Reservoir From September 20, 1993 to December 12, 1993



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