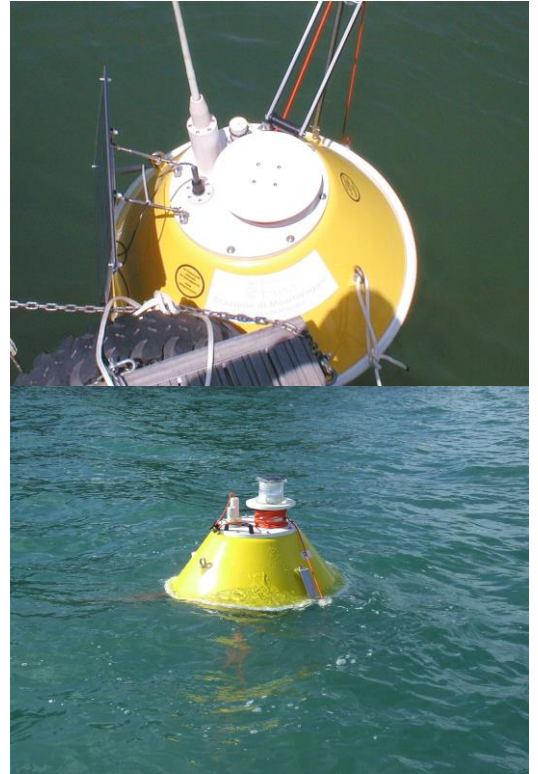


# BUOY PROFILER 601

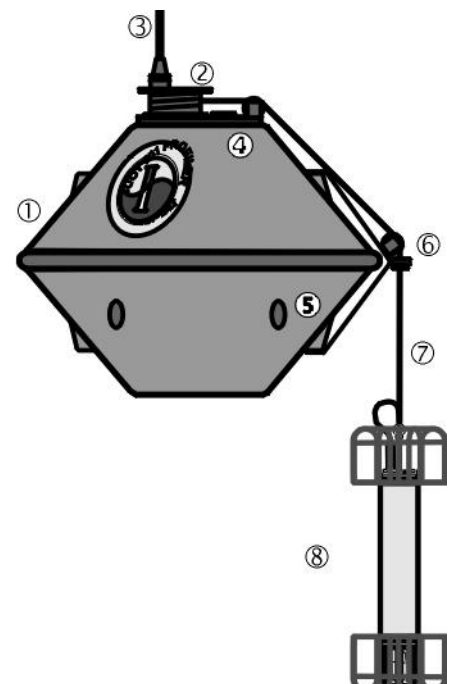
**MARINE SCIENCE, LIMNOLOGY, AQUACULTURE, WATER QUALITY MONITORING**

The BUOY PROFILER 601 is an automatic *in-situ* monitoring system, able to acquire data with high frequency and making them available in real-time. The core of the monitoring system is the Buoy Controller Module which allows, through the availability of advanced digital and analogue interfaces, the creation of a true interdisciplinary monitoring system. Furthermore, taking advantage of the advanced communication (3G) cellular networks reliable and powerful real-time communications toward and from the BUOY PROFILER 601 can be accomplished. The BUOY PROFILER 601 can be moored in place quickly, without special tools; the buoy can be easily moved by towing with a small vessel. The BUOY PROFILER 601 is equipped with the OCEAN SEVEN 316*Plus* multiparameter CTD 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 system. The computer-driven motorized winch is located on the top of the buoy hull that contains the Buoy Controller module and the data transceiver module. The Buoy Controller Module supervise the buoy operations, from the winch movements to the internal diagnostics functions. Thanks to the motorized winch it is possible to performs automatic vertical profiles with the OCEAN SEVEN 316*Plus* which measures among others: pressure, temperature, conductivity, salinity, dissolved oxygen, pH and oxidation-reduction potential and can interface external sensors or data acquisition system (see the OCEAN SEVEN 316*Plus* description).



The buoy hull is manufactured from glass reinforced plastic (GRP) with stainless steel AISI316 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 Allow easy handling and transport. The hull holds up to 6 rechargeable sealed lead batteries (12V, 40 A/h each) giving 3.5 KW hours of reserve power.

- ① Hull, contains the Buoy Controller module, the data transceiver module and the batteries.
- ② Computer driven winch.
- ③ Marine antenna.
- ④ Connectors.
- ⑤ Mooring eyes.
- ⑥ Wheel and pulley support for cable and Multiparameter Probe.
- ⑦ The winch standard cable length is 30 meters of 5 mm polyurethane coaxial armored cable. A special winch version can accept up to 200 meters of 3.2 mm zinc steel armored cable (for fresh water only).
- ⑧ OCEAN SEVEN 316*Plus* probe



## DIMENSIONS

Diameter: 1050 mm, Height: 800 mm, Weight: 160 Kg

## OPTIONS

- Photovoltaic power module.
- Software and hardware to interface a VAISALA meteorological station
- GPS positioning device.

## **BUOY CONTROLLER MODULE**

The Buoy Controller Module thanks to the modularity of its hardware and software components easiness its adaptation to the Buoy profiler 601 characteristics making it ideally to manage multidisciplinary monitoring systems. The Buoy Controller module supervises the monitoring activities, it collect and store data from all the attached measuring probes/sensors at pre-set time intervals, forwarding them automatically, to a FTP server, at the end of data acquisition cycles. Collected data is maintained in a non-volatile memory as backup Information about the status of the Buoy 601 profiler is automatically sent to the FTP server and stored in a dedicated “TXT” file on the FTP site. Remote configuration of the buoy controller operations are possible trough command file present on the FTP server.

Its main performances are:

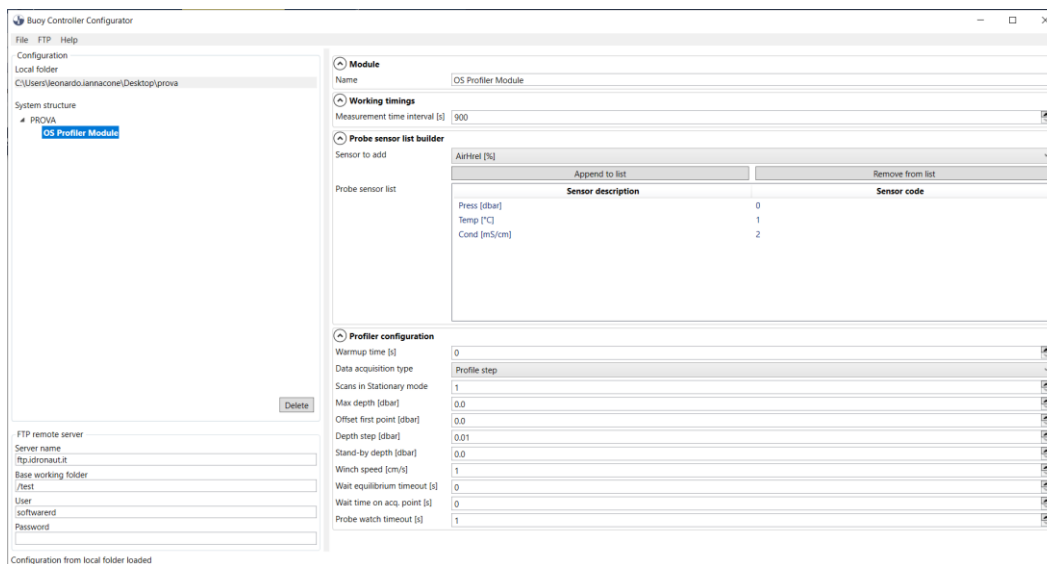
- Low power consumption when operative, negligible consumption during the wait periods.
- Automatic wake-up on programmed timeouts or measuring system service requests.
- Bidirectional communications through the 3G cellular network and a dedicated FTP server.
- Built-in diagnostic and power consumption monitoring capabilities allows the Buoy Controller module to diagnose and report its failures or failures of the connected measuring systems.
- Innovative profiling capabilities like: micro-profilation and automatic stop and go on the data acquisition point.
- Antifouling management which if used with the OS316Plus probes greatly extends the probe working period.

## **ANTIFOULING**

The OCEAN SEVEN 316Plus is equipped with an electrochemical innovative antifouling system which enables the probe to be operated for periods usually longer than 1 month, thus maintaining the measuring sensor accuracy within specifications. The antifouling system does not interfere with measurements and is not harmful to the environment where monitoring occurs: vice versa, it prevents the formation of mineral and biological fouling in correspondence of the measuring sensors.

## **Buoy Controller Configuration**

The Buoy controller configurator Windows software allows the user to prepare and forward to an FTP server the working configuration of the buoy controller. The main features of the software are listed as follows:



- simplified operator's interface taking advantage of the Windows operating system resources;
- configuration of the Buoy 601 profiler working parameters;
- Multiple Buoy 601 profiler can be configured from a single software;
- Local data base of the configured Buoy profiler;
- on-line contextual help system.



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