



HYDRO-BIOS



MultiNet[®] *Mammoth*

Multiple Plankton Sampler

- ▶ Horizontal and vertical operations
- ▶ Easy handling
- ▶ Bi-directional communication
- ▶ Standard depth range 3000 m
- ▶ Long distance FSK-telemetry (> 10000 m)
- ▶ Low power consumption, battery operated Underwater Unit, max. voltage of 5 V at the conductor cable
- ▶ EC-conformity (CE) EN 50081-1, EN 50082-1
- ▶ Electronics operates from -40°C up to +85°C

The MultiNet® Mammoth

The System

Sampling sea and ocean at its best - with the improved MultiNet® generation of the Multiple Plankton Sampler, the world's leading sampling system for horizontal and vertical collections in successive water layers.

The MultiNet® **Mammoth** has an opening of 1 m² and is equipped with 9 Net Bags.

The system consists of a mains powered Deck Command Unit and a stainless steel frame with canvas part to which 9 Net Bags are attached by means of zip fasteners. The Net Bags are opened and closed by means of an arrangement of levers which are triggered by a battery powered Motor Unit. The commands for actuation of the Net Bags are given via single or multi-conductor cable (not included in our scope of delivery) between the Underwater Unit and the Deck Command Unit.

An integrated Pressure Sensor (measuring range according to customer's requirements) allows continuous supervision of the actual operating depth which is indicated together with all relevant system data at the LCD-display of the Deck Command Unit.

In case that a conducting cable is not available on board of the vessel, an Offline-Set is provided which enables to pre-programme the required sampling depths via personal computer. With the Offline-Set the activation of the Net Bags is carried out automatically according to the pre-selected depth intervals. All measuring data are stored inside the internal data memory of 16 MByte during the operation and can be read by a PC when the MultiNet® is back on board.

Operation

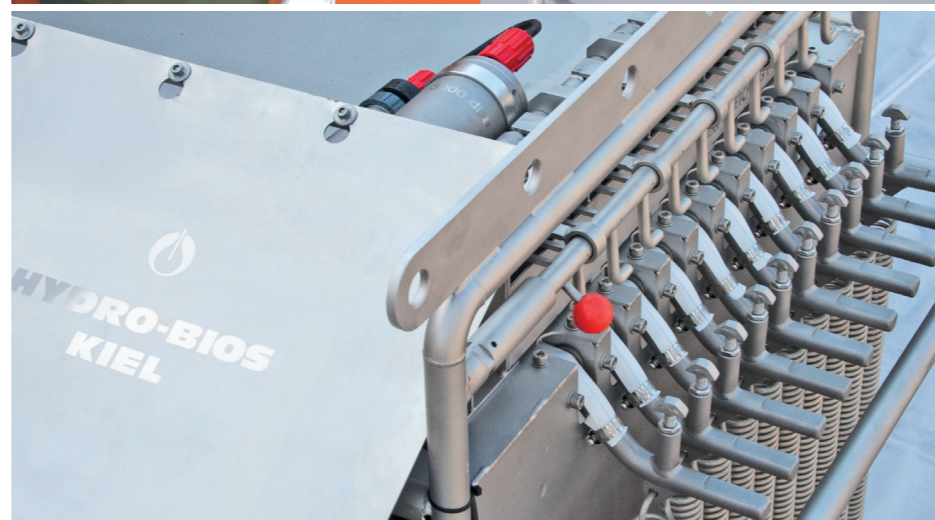
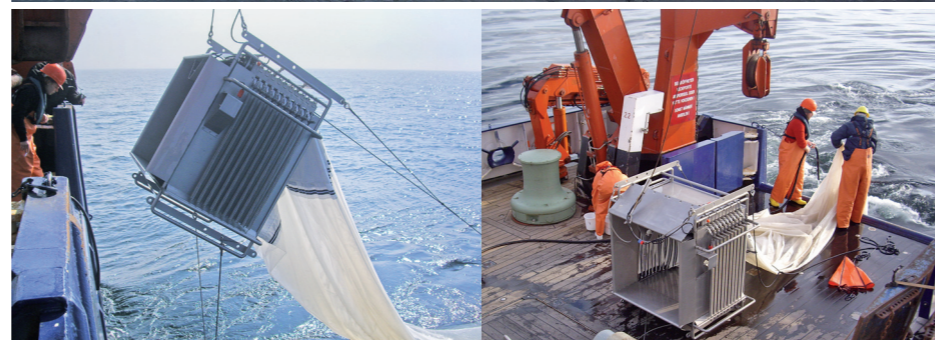
In its initial position the MultiNet® is brought to water with all Net Bags closed. The water flows freely through the frame allowing to lower it to the greatest desired depth with high paying out speed where the first Net Bag is opened by push button control from the Deck Command Unit. At the end of the desired period of horizontal collection resp. after passing the desired depth interval in case of vertical operation, the first Net Bag is closed by a second command. The second net is opened simultaneously. This procedure is repeated for the remaining Net Bags, while the Deck Command Unit indicates the number of the active Net Bag. During operations of the Mammoth version the last net (no. 9) can be closed before reaching the water surface.

Options

CT-Set: Together with the optional CT-Set the system offers the full capability of a state-of-the-art oceanographic Multi Parameter Probe. The CT-Set consists of one conductivity sensor and one temperature sensor which are completely integrated into the Motor Unit of the MultiNet®. From the CTD data the system computes salinity, density and sound velocity according to UNESCO formulas. Additional sensors of various parameters available, in total 4 sensors may be mounted into the Motor Unit.

A special version for operational depths down to 6000 metres is available.

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Technical Data

Underwater Unit	Type Mammoth
Dimensions	
W x L x H	150 cm x 120 cm x 160 cm
Net Opening	100 cm x 100 cm = 1 m ²
Net Bags	9 pcs., length: 550 cm
Standard mesh size	300 microns
Net Buckets	9 pcs., 11 cm dia.
Overall length ready for operation (from bridle to net bucket)	1000 cm
Weights	
Net Frame	approx. 390 kg
Stainless Steel Support	approx. 100 kg
V-Fin Depth Depressor	approx. 70 kg
Materials	
Net Frame	Stainless Steel
Motor Unit and Battery Housing	Titanium
Net Bags	Polyamide
Net Buckets	PVC
V-Fin Depth Depressor	Aluminium, lead-weighted
Operational Depth	Standard 3000 metres
Pressure Sensor	Standard 3000 dbar ± 0.1% f.s. (other ranges on request)
Connection Plug	SUBCONN BH 2 M
Cable Counter Plug	SUBCONN IL 2 F
Breaking load	
for shallow water applications (up to 500 m)	approx. 8000 kg
for deep sea applications (from 500 m up to 3000 m)	approx. 18000 kg
Max. cable resistance (go-and-return line)	1000 Ohms
Deck Command Unit	85 - 260 VAC
Towing Speed	
Recommended for nets with 300 microns standard mesh size	
Horizontal Collections	max. 4 knots
Vertical Collections	max. 1 m per sec.
Cable connection	
Single- or multi-conductor cable, one pole can be in contact with sea water	
Deck Command Unit	
Metal housing for use in 19" rack or as table housing, not for use on deck; push button control for net changing; indication of net number, pressure, battery status, ... Supertwist LCD-display with LED back-light; Interface for Personal Computer (RS 232)	
Underwater Unit	3 Lithium Batteries DL 123 A/3V, sufficient for approx. 100 hours operation

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Ordering Information

438 180 MultiNet® Type Mammoth

consisting of:

- ▶ Stainless steel Net Frame, mouth opening 100 cm x 100 cm (= 1 m²) with pressure capsuled Motor Unit and battery housing made of titanium integrated pressure sensor 0 - 3000 dbar (or to be specified), canvas part with zip fasteners
- ▶ 9 Net Bags with zip fastener, standard mesh size 300 microns (or to be specified)
- ▶ 9 Plastic Net Buckets 11 cm dia., side window covered with sieve gauze
- ▶ Stainless steel Net Bucket Holder
- ▶ 2 Bridles
- ▶ V-Fin Depth Depressor, 70 kg model
- ▶ Stainless steel support
- ▶ Deck Command Unit, mains powered (85 ... 260 VAC)
- ▶ 2 Electronic Flow Meters
- ▶ Windows based HYDRO-BIOS software OceanLab 3 for full system control

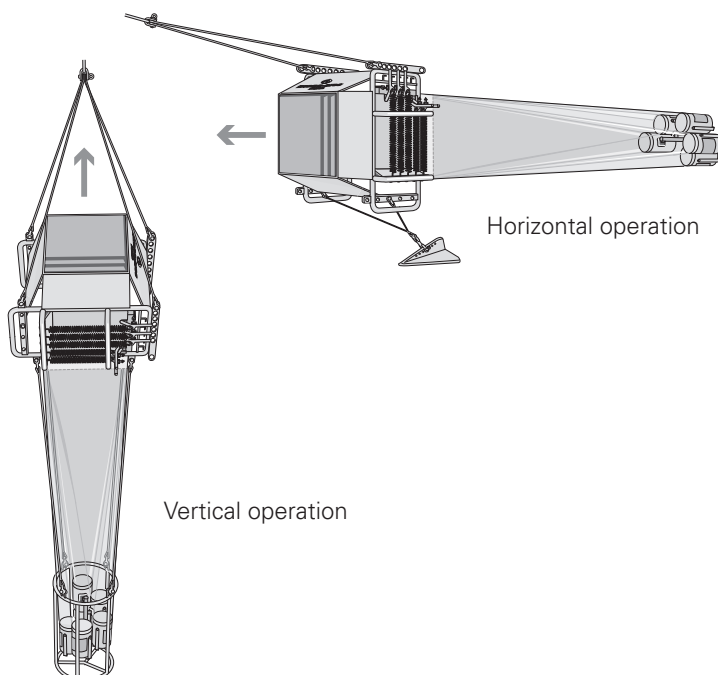
438 161 Pitch and Roll Sensor, Channel Pitch: +60°...-60° +/- 1°, Channel Roll: +60°...-60° +/- 1°

450 500 CT-Set for MultiNet®

Conductivity sensor : 0 ... 65 ± 0.01 mS/cm

Temperature sensor : -2 ... +32 ± 0.005°C

Data rate : 1 Hz (1 data set per second)



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